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Original Articles.

A STUDY OF THE INDICATIONS FOR, AND APPLICATION OF, PHYSICAL CULTURE IN THE TREATMENT OF INSANITY AND ALLIED DISEASES.

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WHEN I began the study of this subject two years ago, I found that practically nothing had been written from the standpoint of the influence of physical culture upon the organism as a whole. Like all remedies, the use of which has had a popular origin, it is used either empirically and indiscriminately, and is credited with some occult or mysterious mode of action, or else it is received with an unreasoning skepticism, and all virtue denied it. Physical culture being a remedy, for guidance in the application of which, we must depend upon our knowledge of the ordinary processes of nutrition and general pathological conditions; it therefore becomes necessary to study in a general way the changes which take place in the processes of nutrition, and the nature of the perversions of functional activity of the brain and nervous

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[1] Read before the Philadelphia Neurological Society, October 26, 1891.

system, in the class of cases to which this form of treatment seems applicable, and to build up a working hypothesis which will serve as a guide in the study and application of the remedy.

In hysteria, neurasthenia and all forms of primary insanity except the degenerative, there exists impaired vitality, produced either by excitement and motor disturbance or auto-intoxication, occurring in states of depression as a result of retained products of excessive retrograde tissue change.

The special characteristic of nervous protoplasm is an irritability which it possesses in excess over all other organized forms of protoplasm—and this excess is due to its function in the economy of receiving, collecting and relating external and internal impressions, and guiding and controlling the manifestations of energy which constitute the activities of the organism, while it is, in its turn, dependent for its vitality upon the activities which it guides and controls.

It follows, then, that anything that interferes with the vitality of the general organism impairs the functional activity of the nervous system ; and the nervous function being imperfectly performed, the vitality of the general organism is further impaired. This reaction may continue until the whole organism is exhausted, or it may become excessive in the nervous system, if the primary disturbance is there, and exist in only a comparatively slight degree in the balance of the organism. It is apparent to any one who observes carefully the effect of shock or strain upon the nervous system, that the first effect produced is increased irritability and functional activity, unless the shock has been extraordinary, when the result is immediate paralysis. At the same time nutrition is interfered with, and elimination is hampered ; there results, therefore, to a greater or less extent, impaired general vitality with especially marked impairment of nervous function which may proceed to exhaustion, with entire absence of response to external impression, as we find it in the profound depression of stuporous melancholia or advanced terminal dementia. Again, we may have impaired vitality manifested in the profound general exhaustion which accompanies acute or delirious mania. A further characteristic of this excessive and perverted activity is its tendency to persist, even after the cause has ceased to be active, and sometimes to go on to permanent perversion and extinction of the individual.

Where a sufficiently strong and persistent exciting cause brings about the degree of nervous irritability manifested in the sensory and motor disturbances, which we define as maniacal excitement, the continuance of the excessive activity results, not only in exhaustion of the nerve cell in the cortex and throughout the nervous system, but also indirectly in general impairment of nutrition and failure of power, while if this failure in nutrition reaches a certain point it, in turn, operates to prevent a return of the nervous organization to a normal state of activity, and should the disturbance of general nutrition persist, the sensory and motor disturbances will continue until, if the motor disturbance is the most marked, the patient dies of exhaustion, or if the sensory manifestations are excessive, mental annihilation supervenes, and the individual's existence becomes vegetative. In states of depression the same results ensue from auto-intoxication, but the mechanism is different. Here we have to deal with a sudden inhibition of irritability in the nerve cell and a concomitant general functional depression, or else with an analogous persistent cumulative process bringing about the same result. External impressions cease to be carried to the cerebral centres, or are carried so slowly and are so imperfectly coordinated and related, that the resulting motor manifestation is so retarded and perverted as to be ineffective. Having these conditions to deal with, it follows that the most successful plan of treatment will be that which combines all means that can be brought to bear to improve general nutrition. It has been my experience that, in functional nervous diseases and insanity, the effect of drugs and food in improving nutrition is limited, and although ordinarily efficient they often fail because they do not enable the overwrought organism to maintain the balance between, or get ahead of, the waste of vitality going on and the efforts for its repair. Even where the plan of treatment ordinarily followed is apparently efficient, we often want an adjuvant which will accelerate the work. This adjuvant I have come more and more to think we have in physical culture.

As a rule, nutrition increases in a direct ratio with the demand for it, and there is nothing that will create that demand like muscular and visceral activity. Muscles waste from want of use, and visceral function becomes impaired from the same cause, while both suffer in addition from retention of the waste products of their activity. It would seem that in violent disturbance of the nervous system, and in profound depression, all other activities were lessened or suspended in the effort of the organism toward the conservation of energy in the direction of greatest need, and as a result the genetic processes of metabolism are interfered with, as well as the elimination of waste products. Visceral activity can be, in a measure, assisted by drugs and food, acting as stimulants of function, but muscular activity comes only from use, and the nutrition of the muscle increases and at the same time the elimination is aided by the general activity of the vital processes. Another point worthy of attention here is that all functional nervous disturbances tend to travel in waves or cycles, and the tendency toward recovery is at the subsidence of a wave or the completion of a cycle.

If any means can be brought to bear at these periods in the progress of the disturbance that will tend to prevent the genesis of a new wave or cycle, recovery will be without doubt accelerated. This seems, to my way of thinking, the way in which physical culture acts, outside of its mechanical effect, in stimulating the circulation and causing muscular movement. Along with the influence of this adjuvant on the organism as a whole, in improving nutrition and removing diseased conditions, there goes its effect upon the mental processes of the individual. This is produced by the regularity and persistence of its application, the uniformity and gradual progression of the procedure, besides the condition of *bien être*, which is engendered by the successful accomplishment of muscular effort; and last, but not least, there is brought to bear the attitude of expectant attention in the patient, replacing his perverted mental activities. Inactivity and seclusion are the necessities of introspection, whereas muscular and visceral activity bring us to a realization of external impressions, with new ideas and trains of thought sinking the *ego* in activities external to the individual.

As a summary of what has been here stated, it seems to me safe to say that physical culture, systematically and progressively applied, is one of the best means at our command for the improvement of nutrition and the furthering of elimination, and that by its method and persistence it tends to check irregular manifestations of nervous energy and to guide them into normal channels of activity. I include under the head of means of physical culture, massage, passive and resistive muscular movements, galvanic and faradic muscular stimulation, systematic voluntary muscular movements and light gymnastics—so called.

Much has been written of the application of massage and electricity to the treatment of hysteria and neurasthenia, and their local use in other diseased conditions, but so far as I know their application to these and other analogous conditions, occurring in connection with insanity, has not been systematically studied from the standpoint of the pathological conditions present, and the influence of motion in altering these conditions and reëstablishing the impaired functional activities on a normal basis. In undertaking the application of physical culture in the treatment of insanity, many difficulties are encountered which do not exist in other forms of nervous disease. These difficulties are inherent in the perverted mental activities of the patient, and generally take the form of suspicion of anything undertaken in their behalf, resistance on account of unwillingness to do anything which would tend to disprove their assertions, of incapacity, or the motor disturbance which accompanies maniacal excitement. These difficulties can, however, by patience and persistence be overcome, and any necessary procedure carried out if too much is not undertaken at once. Of course there must enter into any undertaking of this kind a presupposed knowledge of the general management of the insane that can not be considered here, but which would be an important factor of success. The plan of procedure which I have found most efficient is as follows: In cases of melancholia, mania, hysterical and neurasthenic insanity I begin with massage, using friction alone or with percussion. This is kept up from one to two weeks, according as the manipulations are well or ill received by the patient. Ordinarily they soon grow to like this procedure and look forward to it. These simple manipulations can then be followed by muscle kneading and passive movements of the limbs. Often this procedure can be combined with stimulation of the skin with the secondary current of the faradic battery through the wire brush, and muscular stimulation with the primary current, using the slow interrupter, and getting from eight to twelve contractions from each group of muscles in turn. It is wise to begin this stimulation in the muscle groups of the lower extremities, as the patient is less apt to be disturbed or alarmed by the operation of the electric current. The galvanic current may be used for the same purpose with an interrupting handle, but I never have found any special advantage from its use, and the battery is certainly more formidable looking and less convenient to use. Passive movements can not often be made with the insane, for even in the extreme dejection of melancholia attonita, or the apparent passivity of stuporous states, there is more or less instinctive resistance. However, this does not materially interfere with the success of the procedure, and after a time, by tact and persistence, most of the resistance can be overcome. The procedures here described are applicable principally to patients in bed and to those who are not well enough, either mentally or physically, to take part in general class work. These manipulations are also very efficient against insomnia and restlessness, and will induce sleep where drugs fail, or, in most cases, will replace drugs entirely. It is true that it takes more time and a more than usually efficient attendant to carry out this treatment, than it does to give a hypodermic of hyocine or a dose of chloral, but it is safer and more apt to be permanently efficient.

Light gymnastic exercises can be taken by the patient, either alone or in company with others, some patients seeming to work better and more willingly when alone, while others do better at class work. It is best to begin with free hand movements, so called, which are very much like the movements an army recruit is put through before he is taught the manual of arms ; the object being to bring the different groups of muscles into play in turn. These movements are capable of considerable variety, according to the ingenuity of the instructor. They should be directed with a definite object, and presuppose in the director some knowledge of the relationship of muscle groups and the planes of muscular movement. With these free hand exercises can be combined marching and counter-marching, different evolutions, and, with women, dancing in its simpler forms, for, as a rule, they can not take such a variety of other vigorous muscular exercises as men. After a degree of ease and proficiency in movement is acquired dumb-bells and the Indian clubs can be added, and a variety of systematic and definitely coördinated movements gone through which are not only efficient but entertaining. The chest weights can also be used, and they possess the advantage of enabling the user to gradually increase the muscular work. Other gymnasium apparatus may be used if convenient, but those I have named answer every practical purpose and may be used in a private house as well as in a gymnasium, consequently they furnish a means available in private as well as public practice. With regard to the chronic insane, gymnasium work forms the best form of exercise available for all those who can be gotten to take part in it, but my observation has been that it is almost impossible to get men and women past middle life to take part in any kind of gymnasium work, whereas they may be interested in a variety of other occupations which will furnish them enough exercise to maintain good health. I am strongly of the belief that a system of military drill, carried out in definite directions, would materially aid in quieting restless, obstreperous and noisy patients, by expending in uniform channels of activity the irregular discharges of nervous energy which are constantly taking place, without any definite object, but to relieve the overwrought irritability of an irregularly functioning cortex. I have not gone much into detail with regard to the different means of physical culture which can be applied in the treatment of insanity, partly because every one undertaking work of this kind would necessarily have to modify any procedure suggested, and arrange the details to suit the circumstances by which he was surrounded, but principally because my experience has taught me that it is of much more importance to understand the fact of the value and applicability of this plan of treatment. I have found it of most service in hysteria and neurasthenia as concomitants of insanity and in the different varieties of states of depression. It seems to me, however, that physical culture would be most applicable to that large class of cases which never come to institutions for treatment, or else only after all attempts at cure at home have failed. I do not claim for physical culture a place except as an adjuvant, but I do think it an important one, and that under its influence a great many patients will be restored to mental soundness, who otherwise would, in spite of other measures, pass steadily and surely down the stream of chronic insanity from which there is no return, and which ends in the abyss of dementia.

HEMORRHAGIC TUMOR OF THE PITUITARY BODY AND INFUNDIBULUM IN A CASE OF PERNICIOUS ANÆMIA.[1]

By J. M. ANDERS, M.D., and H. W. CATTELL, M.D.

(Reported from notes by Dr. F. B. Reynolds, Resident Physician, Philadelphia Hospital.)

April 24, 1891.—T. H., aged 34, waiter, was admitted to the Philadelphia Hospital in 1887. His mother died of consumption; his father is living and well; he has no brothers and sisters. He was delicate as a child, but his health was good as he grew up. He never used liquor to excess, and had had no venereal disease.

In 1871, while working in a swamp in Virginia, he had chills and fever; he had a chill daily, for every other day, for about six months. He was then unable to work steadily, and he grew weak and lost flesh. At the end of six months he left the locality, and thinks he recovered perfectly. He then went to work, and was in good health until the fall of 1874, when he had typhoid fever. He was in bed about six weeks, and after this he was very weak and pale, and had constant sensations of coldness. After the typhoid fever he gradually regained his strength, but noticed that the pallor continued, and he never had his former robust appearance. He did not begin working until June, although he felt in his usual health for two months before this; he worked steadily for fourteen years. After the fever, he says that his hair all fell out, even over his body, and it never returned as before. He has no beard, and the hair about the pubis is very thin and coarse; it is about an inch long at the symphysis.

A year after having the typhoid fever he began to have attacks of dizziness, and things would look colored and blurred, and he would be unsteady. He had constant pains in the head, and during the attack would be nauseated, and vomit. He would be laid up and unable to work for several days at a time; and besides the dizziness he would have sensations of falling, and at times would become unconscious. These attacks continued to become more frequent and severe for about two years, but he noticed no change in his general health. He was under medical treatment, and the attacks became less frequent and severe. From this time, until his admission to the hospital in 1887, he had no other symptoms.

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[1] Read before the Philadelphia Neurological Society, October 26, 1891.

In July, 1887, he was taken with a severe diarrhœa, after he had been drinking some, and had been eating fruit. After admission, the diarrhœa grew better in about two weeks; when, however, he had a chill, and for eight or nine days after this he was unconscious. He remembers nothing during this time, but was told that he would appear conscious for a few minutes and try to speak, but was unable to do so. When he did regain consciousness, he was weak and exhausted, and could not raise himself in the bed. He was kept in bed for about two months.

He regained his strength but slowly, and had not been as strong as before since the attack of diarrhœa. He then went to work in the dining room of the hospital, and continued for six months. During this time he had slight attacks of dizziness.

In the fall of 1890, while at work, he complained of pains in his head for about a week; these gradually grew worse, so that when stooping his head would feel as if it would burst. One day, while pouring out milk, everything turned of a red color, and whirled around, and he became unsteady and lost consciousness for a few minutes. When he recovered he felt weak and dizzy, and had no appetite. He remained in bed about ten days. Of late he has had dizzy spells much less frequently, and his appetite is very good.

He occasionally has pains in all the joints, at which time he loses his appetite and has an increase of headache.

He has had attacks of quite severe nose bleeding. He has not had any cough.

He feels much better in warm weather and has trouble in keeping warm in winter. He is very sensitive to sudden changes of temperature.

The following notes, made March 5, 1889, are among the hospital records:

April 5, 1891.—The patient is sallow and anæmic to a most exaggerated degree. Emaciation is not at all marked, and there appears to be a goodly layer of adipose tissues; the joints and angles of the body are all rounded out. The tongue is pale and marked by the teeth; the gums show some reddening. The finger nails are not clubbed, but the hands and fingers readily become cyanotic, and the patient says they become cold. The chest is marked by blue veins shining through the translucent skin. The chest is full, rounded, and expanded well. There are no changes in percussion resonance, and none in the vocal resonance and fremitus, and no râles or adventitious sounds are heard. The heart sounds are normal, the second is accentuated, no murmur is heard at the base, and none in the veins of the neck. There is no enlargement of the liver or spleen. The abdomen appears distended, and gives a tympanitic sound on percussion.

August 18, 1891.—During the past three months the patient has had an attack of acute aortic rheumatism, and has lost ground during this time. He has been very weak, and has remained in bed most of the time; he has had no appetite, and has vomited nearly everything he ate. He was put upon tonics and improved.

October 2, 1891.—There is little improvement in the patient's condition. He has had attacks of facial neuralgia; and of anorexia with vomiting. His legs are somewhat swollen at night. He has no change in color, being still of a pale saffron hue. This morning, while walking, "things looked black," and he fell. To-night he feels cold and very weak; appetite is absent, and he has eaten nothing for twenty-four hours. Such attacks as these have been common.

October 7, 1891.—This morning, Dr. Reynolds' notes are as follows: "The patient seemed in his usual condition, and took his medicine about 10.45 A.M. The nurse noticed that he picked at the bed clothes. On going to him she found he was delirious and understood nothing that was said to him. I saw him soon after, and his condition was very peculiar. His facial expression was blank, eyes open, pupils moderately dilated, but immovable. There was some internal strabismus of the right eye. He did not recognize me. On touching or moving him he gave a very peculiar cry, like that of a calf, which was audible in adjacent wards. This cry he repeated at frequent intervals. At times he would attempt to strike or clutch those near him, but without much force or purpose; he would throw his hand to his head as if in pain. He was at no time in an excited condition, and the delirium was mild. There was no evidence of paralysis. His temperature was 97°; respiration, 16; pulse, 48, and inclined to be irregular, every third or fourth beat being replaced by two in rapid succession; the pulse was small, but did not seem to differ much from the normal volume. The heart sounds were clear and distinct. He was catheterized, and six ounces of clear urine, of light yellow color, sp. gr. 1024, acid, and without a trace of albumen, was drawn. At the apex of the right lung percussion dulness was noticed, and numerous mucous râles were heard on auscultation; otherwise the lungs were normal. This condition had not been discovered before, and had probably existed only a short time; he had had no lung symptoms.

"He remained in the same condition for about an hour, after which he gradually began to notice objects and answer questions in a confused manner. At one o'clock his mind was in about its usual condition. The strabismus had disappeared, and the pupils reacted to light. He said that he thought he had been dreaming, but remembered nothing that had occurred while delirious.

"*October 8, 1891.*—The patient had a return of delirium this morning, but it was not so marked as yesterday. He could be made to understand questions, and he was not as restless, and did not cry out as yesterday. The condition lasted about two hours; his mind was clear in the afternoon.

"*October 9, 1891.*—During the night he was delirious and unconscious most of the time. About 7 A.M. he had a clonic and general convulsion, lasting about five minutes, followed by stertorous respiration. During the day he had three more until 3 A.M. He had been unconscious, turning at times and unable to take medicine or nourishment. Temperature was subnormal; pulse 48. He passed very little urine. He died at 8.30 P.M., somewhat suddenly in a slight convulsion. He had five convulsions during the day. For one hour or more before death each expiration was accompanied by a deep moan. All his symptoms during the past three days had closely resembled those of uræmia, and I am not sure but that his death was due in whole or in part to uræmia, although no urinary symptoms but partial suppression could be detected."

Autopsy.—Held nineteen hours after death: The body of a well-formed man, having practically no hair on the body except a small patch on the pubis; the skin was like that of a woman. Pleuritic adhesions were found at both apices. The lungs were somewhat emphysematous. Throughout the whole post-mortem but little blood was lost, the tissues being very anæmic—almost bloodless; there was a considerable amount of pericardial fluid. The heart was small, with no lesions.

The weight of the liver was two pounds three and a half ounces, and it appeared to be atrophied. The right kidney was larger than the left, with a beginning parenchymatous nephritis in both. The marrow of the long bones was redder and softer than normal. The spleen was small; the capsules somewhat thickened and white in places. The bladder contained about six ounces of urine. The vermiform appendix was patulous. The supra-renals and cord were not removed.

On lifting the frontal lobes of the brain, a glistening membrane, the size of the middle finger, was observed about the position of the infundibulum; this covered the roots of the olfactory bulbs and the optic chiasm, and extended over the anterior cerebral arteries. On cutting the dura the mass was found to be of doughy consistence, and it exuded a brownish fluid. It protruded from the sella turcica, being in the position of the pituitary body and infundibulum. It was apparently a pigmented hemorrhagic tumor. The pituitary body was infiltrated and changed, and destroyed to an extent that could not be determined in the gross specimen. On dissecting the mass out of the sella turcica, and placing the brain base upward, it was about one inch in its greatest diameter, and it had displaced the dura mater, portions of which tightly encircled and constricted it, so as to form a stout pedicle in the position of the infundibulum.

PATHOLOGICAL CONDITION OF THE NERVOUS SYSTEM IN DIABETES.

Sandmeyer, Deutsche medicinal-Zeitung, gives the microscopical findings in a case of diabetes, occurring in a child seven years of age, coma and death taking place two years after the onset of the disease. A thorough examination of all of the organs of the body was made. Sections of the medulla showed nothing abnormal. Examination of the spinal cord revealed extensive discoloration of the meninges with numerous blackish patches of degeneration. This degeneration was confined principally to the cervical enlargement, the anterior third of Goll's column being most involved, in the middle third the alteration was slight, while the posterior third showed nothing out of the normal. The roots of the nerves were intact. Microscopical examination of the degenerated patches disclosed the characteristic fatty alteration which was found in the kidney. B. M.

A CASE OF MENINGEAL TUMORS OF THE PRE-FRONTAL REGION—LATE PULMONARY TUBERCULOSIS—HISTORY OF SYPHILIS.[1]

By JAMES HENDRIE LLOYD, M.D.,

Physician to the Philadelphia Hospital, to the Methodist Episcopal Hospital, and to the Home for Crippled Children.

THE following case presents several points of special interest. The most important are the mental symptoms, such as slow cerebration, caused by a frontal lesion, and the prompt detection of commencing pulmonary tuberculosis. This complication was held to be a good reason for abandoning a trephining operation, which had been determined upon and which would have been successful, probably, in reaching one of the tumors.

R. H., 32 years old, colored, a waiter by occupation, single, was admitted to the Philadelphia Hospital, March 6, 1891. Five years before admission he contracted syphilis, and three years later he had a fit for the first time. He did not lose consciousness in this attack, but he was not able to describe the fit. During the summer of 1890 he had constant headache, which was not localized and which was relieved somewhat by treatment.

The patient when admitted had a swelling of the soft tissues of the brow and eyelid of the right side, with a slight prominence of the eyeball. No paralysis of the third, fourth, or other cranial nerve was observed. Nystagmus was not noted. Lachrymation was excessive. The swollen parts were so painful that the man would not allow manipulation of them. He said that the swelling had been present since the previous Christmas. He complained of much pain in both shoulders. He was not paralyzed in any limb. His heart and lungs were normal. His mind was dull. He cerebrated slowly and did not make known his wants, and unless spoken to he did not speak.

The most characteristic symptom was this slow cerebration. In view of the location of the lesion in the prefrontal region this had special significance. It was peculiar.

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[1] Read before the Philadelphia Neurological Society, October 26, 1891.

The patient seemed to comprehend the question and yet did not answer it for a long period, and not until he had been urged repeatedly. It looked at first like obstinacy, and was so judged by some who saw the case. When the answer came it was correct, but given in few words. This retardation in the time-reaction was estimated at its true value in my original study of the case. I judged it to be pathological and significant of a frontal lesion. The man did not exhibit, however, the irritable and violent character which has been noted by some in lesions of the frontal lobe. Yet his actions were similar to the automatic or reflex movements seen in some of these cases. This was shown especially by his total disregard of time and place in passing his urine and fæces.

Later the superior rectus muscle became apparently paretic, but it was so in appearance only, as the eyeball was held down by the swelling. Although at times there appeared to be some strabismus, it was difficult to tell what muscles were involved. These symptoms were caused probably by œdema of the tissues. Nystagmus was now present. Hyperæsthesia over the forepart of the head, even on the left side, was noted. The temperature, pulse and respiration were normal for the first six weeks, during which time the patient's mental condition did not improve. Muscular rigidity was noted a few times. The knee-jerk was abolished. He passed his urine and fæces in bed. When remonstrated with for his unclean habit, he seemed to be perfectly rational, and to understand what was said to him, but the habit continued because, apparently, of his inability to fix his attention and to respond to sensory impressions. The lower centres acted automatically or reflexly.

On careful inquiry the patient denied any injury. The swelling was crepitant. No alteration of the bone could be detected because of the swelling and pain.

The man continued to have quite frequent fits (several a week). The nurse reported that in one of these the mouth was drawn to the left; consciousness was quite abolished. After the fit the right knee-jerk was much freer than the left. The hyperæsthesia about the eye could be demonstrated even in the post-epileptic stupor. An eye examination at this time by Dr. Gould gave negative results.

The patient left the hospital, and was gone about a month.

When he returned, in June, exophthalmos and swelling about the eye had diminished, but a painful, soft, fluctuating swelling was present over the right frontal eminence. The mental condition had so much improved that it was about normal. He still had an occasional involuntary urination at night, and more rarely an involuntary stool.

At this time, three months after the patient's first admission, the swelling was opened and drained by Dr. F. S. Janney, the resident physician. It contained pus and caseous material. It healed well, and gave no further trouble; but the scalp remained slightly tender at that point.

About one month later the man's temperature was found to be ranging high at night. Physical examination revealed a few moist râles at the apex of the right lung in front, and dry râles high up in the interscapular region. He had no convulsion for more than one month after draining the scalp abscess.

On July 15th, in consultation with Drs. Mills, Sinkler, Dercum and Deaver, of the hospital staff, trephining was decided upon; but one week later the idea of operation was abandoned, because the indications of commencing tubercular disease of the lungs had become still more marked. Careful examination again showed bubbling râles at both apices, most marked on the right, and sibilant râles between the scapulæ. The resonance was impaired over the upper part of each lung. The urine showed a trace of albumen.

The disease advanced rapidly. Expectoration was always scanty. The symptoms of brain disorder continued about the same. The patient had an occasional fit, the character of which was not noted. He was very slow in his movements. His lungs seemed to clear up after a convulsion—that is, he had fewer moist râles. This was attributed to the deep and labored respiration seen usually toward the end of an epileptic paroxysm.

In July an examination of the eyes was made by Dr. de Schweinitz, with negative results.

Up to the time of death, which occurred in October, the symptoms were those of a rapidly declining phthisical patient, the temperature usually ranging between 100, 101½°. For two or three weeks the man was troubled with a severe diarrhœa. A fistula in ano was discovered two weeks before his death. The last convulsions were two in succession about a month before he died. During the last weeks of his illness he did not complain much of headache. He continued to be slow in speech, but, like many phthisical patients, he rather grew in hopefulness toward the last, and wished to leave the hospital. He was confined to bed about two weeks.

At the close of my term of service, on August 1st, the patient passed into the care of Dr. Charles K. Mills. The autopsy was made by Dr. Leys, resident physician, under the supervision of Dr. Mills.

Autopsy.—To the right of the median line, about two to three inches above the orbit, the calvarium was moderately adherent to the dura mater, and, on carefully removing the bone, it was found to be deeply eroded and infiltrated at this position over a triangular space, the greatest width of which was about two inches. The eroded area presented a caseo-purulent appearance. The inner plate of the bone had been largely worn away, and the entire bone presented a water-logged appearance. Just at this position, perforating the dura mater, was a tumor, one inch by one and a half inches in its greatest dimensions, soft and yellowish in color. It was over the anterior portion of the second frontal convolution. Subsequent examination showed the dura and pia arachnoid and cortex were loosely agglutinated. The cortex was somewhat infiltrated and softened. In a symmetrical position on the left side, an exactly similar mass was found, but it was only about one-fourth of an inch in diameter. A third similar and still smaller growth was found over the inferior parietal convolution, just behind the retro-central fissure. The ventricles were moderately dilated. The rest of the brain and spinal cord showed no gross abnormalities.

A recent pleurisy was observed over the lower lobe of the left lung, and areas of chronic pleurisy were widely distributed. In the upper lobe of the right lung was a large cavity, and both lungs showed general tubercular infiltration. No tubercular deposits were present in other organs.

A CASE OF "RAILWAY BACK."[1]

By F. X. DERCUM, M.D.,

Instructor in Nervous Diseases, University of Pennsylvania.

NOTWITHSTANDING that the literature of railway and allied injuries is now quite extensive, it cannot be denied that too little attention has been paid to the physical condition of the back. The back, it should be remembered, is in a large number, if not, indeed, in the majority of cases, the part upon which the injury-inflicting violence is first received, and it has seemed curious to the writer that conditions apparently easy of recognition have not been noted by others, or, if noted, have been passed by without any appreciation of their significance. Apparently, the scientific mind has been taken up by the various symptoms referrible to obscure derangements of function of the cord or brain, or to hysteria, auto-suggestion or what not, while factors less recondite, less difficult of interpretation, have been neglected.

These factors are, in the writer's experience, present in the larger number of "railway spine" cases, and though not always present in the same exaggerated degree as in the patient I am about to show you, they can generally be demonstrated without much trouble.

The history of the case before us is briefly as follows :—G. T., aged forty-seven, single, and an upholsterer by trade, was in good health up to October 22, 1890. On that day he was sitting on the rail of the South Street bridge (Philadelphia). His hat blew off, and letting go his hold upon the rail to catch his hat, he lost his balance and fell a distance of some thirty feet upon a mound of earth. He struck upon the back and head, became unconscious and remained so until he found himself in the University Hospital, to which he had been removed, on the same day. He was at first very much confused, and suffered intensely from pains in the back and head, and his entire body seemed to tremble. On October 27th he was discharged, and on the same day admitted to my wards at the Philadelphia Hospital. When first seen by me, he walked into the office of the nervous pavilions, walking without assistance. He seemed however weak, and his steps were evidently shorter and slower than normal. He stripped to the waist without help. He complained of pain in the lower dorsal and lumbar regions, and here, deep pressure revealed great soreness. Marked pain was also elicited in this region by flexion, torsion and transmitted shock. Marked spasm of the muscles in this region was also noted on movement. In addition, there was marked tremor of both arms and shoulders. He also complained of headache and seemed much depressed.

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[1] Patient exhibited October 26, 1891, before the Philadelphia Neurological Society.—(A partial account of this case was published in Am. Journal. Med. Sciences, September, 1891, as Case IV. in the "Back in Railway Spine."

He was at once placed in bed on the rest cure. Milk in as large quantities as he could take was given, and for a time, massage was attempted, but this had soon, owing to the painful condition of the back, to be abandoned. Instead of improving, his symptoms steadily increased in severity

His back became more and more painful. The muscles soon attained a condition of almost constant spasm, and as a consequence, rigidity was very marked. The back soon became sensitive to superficial pressure. Excessive sweating also set in. Tremor became more pronounced than ever. Four weeks after admission, his symptoms had attained their height. The man was thoroughly and abjectly miserable. He was excessively depressed, cried easily, complained of headache, said that he could not sleep, dreamed sometimes that he was falling again from the bridge, had ringing of bells and hissing noises in his ears, trembled worse than ever, had difficulty in passing his water, frequently had sharp pains shooting through his back and head and even in his abdomen. In addition, there was now decided loss of sensation in both feet and he was utterly unable to stand. His weakness was extreme. The sweating continued unabated. Bowels were constipated. Knee-jerks much exaggerated. Micturation frequent.

He remained in this condition with but little change until the latter part of February, 1891. The spasm of the muscles was now wide-spread. Originally, it will be remembered, this spasm had affected only the muscles of the lower dorsal and lumbar regions. Now it radiated to all of the muscles of the back and even of the shoulder.

His speech was at first short and jerky, and at times it was so interrupted and spasmodic as to resemble that of a patient suffering from a chill. Efforts at speaking seemed to increase the spasm of the muscles in his back, and fatigued him very much.

In order to secure absolute rest for a time, a plaster jacket had been applied. In the latter part of February, this jacket, which was worn about a month, was removed. The patient now passed from my hands to those of my colleague, Dr. Sinkler, who again instituted massage. The latter treatment was now well born and appeared to be followed by a more marked improvement. However, the patient lingered in the wards until the following June, when he left the hospital, walking out with the aid of crutches.

October 21st, 1891, he was again admitted to my ward, having suffered some exaccerbation of his symptoms. After leaving the hospital he had rested with some relatives at Ridley Park. Here he seemed to steadily gain in strength until the latter part of July when, after too great effort at walking, the pain in his back again grew worse, the tremor very much increased and he lost considerably in weight.

His condition at present is as follows:—Entire trunk, rigid. Spasm of muscles very marked over all the muscles of the back, shoulders and chest and even noticeable in the muscles of the arms and thighs. Over the back and shoulders they are hard and firm. Here and there, spasm of individual muscular bundles simulate fibrillary contractions, more noticeable in the deltoids than elsewhere.

The spasm is markedly increased by attempts at flexion of the trunk either forward or lateral, as well as by torsion. At the same time that these movements are attempted, the patient complains of pain in the lumbar and lower dorsal and cervical regions. Pain is also elicited in these regions by transmitted shock and deep pressure. Spasm of the muscles is also increased by percussion, but there is at present no hyperæsthesia of the skin.

Almost as striking as the muscular spasm is the excessive tremor which is marked in the head, arms and legs. It is as you see, coarse and of wide extent. If the patient lie down it is diminished, if he exert himself it is increased, though he can momentarily lessen it in the hand on attempting to grasp an object. Evidently this tremor is in some way related to the profound disturbance of the muscles so typically seen in the back. Its significance I propose to discuss in a moment.

The man walks slowly and with difficulty, both by reason of weakness and of pain. The knee-jerks are much exaggerated and there is paradoxical contraction of the tibialis anticus.

There is no loss of sensation at present in the legs. Frequent micturition is, as of old, a marked feature, the man being compelled to rise several times at night. Sweating is still excessive though less so than formerly. Sleep is still very bad, the patient waking frequently and very suddenly. However, frightful dreams and night terrors do not occur as they did formerly, and in this respect the patient is better.

He still suffers severe occipital headache, the pain extending forward in a line with the base of the skull to the brows. Tinnitus aurium, formerly very pronounced, is still present at times.

He still speaks with difficulty, though his speech is less jerky than formerly.

To my mind the symptoms presented by this man are referrible to two conditions, first, an actual, physical injury, and secondly, the sequelæ of shock or, to use the more fashionable latter-day expression, traumatic neurasthenia.

It is with the first condition, the physical injury, with which we are more directly concerned. What is it? In order that I may make myself clear, let us picture to ourselves the normal back of an individual walking or standing. Here the spine is held erect and enabled to support its burden of shoulders, upper limbs and head, by the constant action of numerous powerful muscles. Not only is the spine thus relativelyfixed in position, but also, by a constantly varying and accurately adjusted change in the tension of the various muscles, adapted to continual changes of strain. Broadly speaking, in the erect position the muscles of the back are in constant tension. The tension varies, it is true, in degree as secondary strains are brought to bear, but, nevertheless, it is always present. As I have elsewhere expressed it, the erect spine is " like a bow with many tense strings." Now, that under some new and unexpected strain, a severe blow, a sudden jar, actual damage of these structures should occur is not to my mind surprising. Indeed, it is to me almost a necessity. We all know how numerous and complex are the muscles of the back; how numerous and complex are their insertions, and it is extremely probable that actual tears of fibres occur just as we have reason to suppose is the case in other muscular and tendinous sprains. Granted this much, and muscular pain and spasm are accounted for. Further, it is improbable that in severe accidents the damage is limited to the muscles or their insertions. We are all aware of the relations which the vertebræ bear to the intervertebral cartilages and especially the relations which the articular processes bear to each other. Evidently it is merely a question of the intensity of the blow or disturbing violence, as to whether a lesion of their structure occurs or not. We all admit fractures and dislocations of the vertebræ, why not admit sprains of their joints?

We can readily understand that muscular spasm should occur in lesions such as I have suggested, just as it may occur in similar injuries of the extremities. An added and a powerful factor in the production of the muscle symptoms must, however, be considered. There is always a disposition, involuntary and voluntary, to restrain motion in a part that has been painfully injured. Thus it is that we have spasm first in the immediate neighborhood of the seat of pain and secondly rigidity of the entire back. Every muscle, near or remote, seems bent on holding the very movable spine still. In a large number of cases that have come under my observation, in which the injury was less pronounced and less general than in the present instance, muscular spasm was found merely in the immediate neighborhood of the region of pain or, perhaps, only became evident as the patient attempted to flex or rotate the trunk. In other cases again, as in the present, it was more widely distributed, having radiated to even distant muscular groups. It follows that it is only necessary for the spasm to be sufficiently pronounced or sufficiently distributed to make the entire back very rigid.

So much for the spasm and rigidity exhibited by this patient, but what explanation shall we look for to clear up the mystery of the tremor? Let us look at our patient. It is evident, I think, at a glance, that the tremor is directly related to the muscular spasm. As we look at the back we see that here and there the spasm is not continuous but intermittent, and that this intermittence is synchronous with the tremor observed elsewhere. Evidently the intermittence is but an expression of the weakness of the muscle—of its inability to maintain a continuous tonic contraction, and it is but fair, therefore, to conclude that the general tremor is the combined result of motor erethism and motor weakness.

That the patient should be weak considering the general shock from which he suffered is not surprising. It is not, however, my object to discuss the symptoms referrible primarily to his neurasthenia. They are typical and are such as are present in numerous other cases.

Before handing the patient over for your examination and discussion I would like to call attention to a probable peculiarity of his accident, inasmuch as it may influence our conceptions in similar cases. This man fell, you will remember, quite a height. You will recall instantly the fact, that in falling the limbs are thrown out in a reflex manner in an attempt to save, and that the muscles become quite rigid. So well indeed is this fact acknowledged that, as you know, surgeons are in the habit of accounting for fractures by supposing that this or that muscle was tense as the patient fell. Is it not probable that the same is true of the trunk and more especially of the back? And if the back of the patient before us was rigid at the moment that he received the blow, so much the more reason for muscle, joint and tendon sprain.

[N. B.—The entire absence of any element of litigation makes the above case exceedingly valuable. The symptoms, both objective and subjective, are identical with those which time and again are presented, in whole or in part, by persons injured in railway accidents.

Further, chronicity is illustrated by this case in a typical manner. At time of going to press, now fourteen months after his fall, the patient is still in bed. He left the latter, as we have seen, during a short interval, in which there was some mitigation of his symptoms. Slight exertion, however, caused a return of their severity, and they are still present in a very marked degree.]

NERVOUS SYMPTOMS FOLLOWING THE USE OF QUININE.

Dr. A. Erlenmeyer reports, Centralbl. f. Nervenheilk, a case of poisoning by quinine which seems to be of some interest. Previous to this writing the author had observed abolition of the reflexes in several patients who were taking large doses of quinine, but in the case under consideration the symptoms were of an intense reflex irritability. The patient, aged forty-two years, had taken at one dose 1,0 of the drug, on the following day 2,0, in broken doses, examination of the patellar reflex at this time, by tapping and so forth, brought on a series of general convulsions with violent contractions of the arms and the whole body. On leaving off the medicament for twenty-four hours the nervous excitability would entirely disappear.

INEQUALITY OF THE PUPILS IN EPILEPTICS, WITH A NOTE ON LATENT ANISOCORIA.[1]

BY WILLIAM BROWNING, M.D., BROOKLYN, N. Y.

THE condition of inequality of the pupils, technically termed anisocoria, is not very rare even in persons of average health. No great importance attaches to it in any class of troubles, but as an *objective* sign it is worthy of further study.

Its occasional occurrence in epilepsy has long been noticed, and a diagnostic value has even been attributed to it in suspected cases of the nocturnal form (Fürstner, 1886).

It is of course merely a symptom, occurring casually where there happens to be some implication, if only exhaustion, of the pupillary paths or centres.

In a series of 150 consecutive cases of epilepsy observed for interval symptoms at the Long Island Hospital Dispensary in the last eight years, this condition was noted altogether in 16,[2] although varying some in degree and constancy. Of these 16 cases, 12 were males and 4 females (of the whole series of 150, 84 were males and 66 females). Only 3 ($\frac{3}{16}$) were in patients over 22 years, while two-fifths ($\frac{2}{5}$) of the whole series were over that age. One of these three older patients was a typical Jacksonian, another was probably some secondary form of convulsions, and the third showed slight indications of tabes: hence it is evident that in idiopathic epilepsy, anisocoria occurs predominantly among the younger patients.

A few quotations from authorities at hand will serve for comparison.

Schleick (1886), in examining 127 hospital epileptics, found only one case of decided difference in the width of the pupils, the eyes being otherwise normal. Marie (*Arch. de*

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[1] Presented to the American Neurological Association, Washington, D. C., Sept. 22, 23 and 24, 1891.

[2] In one other case it was questionable, but put down as negative. In still another, the outline of one pupil may not have been quite regular.

Neurolg., 1882, Paris) observed an inequality in 8 of 53 institution cases (about 15%), the difference amounting to ⅓ mm. in 6 and to ⅔ mm. in 2. Musso (1884, quoted by Hare) found that there was in 22.8% (of 70 cases) an inequality of the pupils. Addison (1867, also from Hare) found an inequality in 2 of 50 insane epileptics. Oliver, of Philadelphia, from his studies on 50 adult American male epileptics at the Norristown Asylum (1887), says: "Pupils are, as a rule, equal in size and alike in shape."

As to the proportion in non-epileptics, or as to what proportion of the above cases may be due to local anomalies of the eye itself, we have no figures for comparison.

The different proportions found by the above authorities may be partly due to closeness as well as time of observation. For, in frequent cases, there is just a suggestion of inequality, yet not so pronounced as to be at first unmistakable. Moreover, the condition seems to be somewhat more frequent and more marked directly after an attack. The different age of the patients, as already indicated, may have some influence.

Probably the above proportion in my own cases, of 16 in 150, might have been increased had the slighter inequalities been more carefully sought, especially in the earlier cases of the series. But a close scrutiny even of this limited number suffices to show certain important differences, and to suggest more exactly why there may readily be a wide diversity in such statistics.

Three somewhat distinct types are distinguishable.

1. Where there is a very considerable inequality.

This form—doubtless the only one heeded by many observers[1]—occurred in a special class of patients. There were three such cases, and each was in an epileptic with decidedly unilateral symptoms, These were all in younger males, though of course this form might well occur at any age.

One of the three was a syphilitic with typical Jacksonian seizures. The second was probably hereditarily syphilitic (when finally relieved of his epilepsy the pupils gradually became equal). The third patient had suffered a traumatic cerebral hemorrhage as a cause.

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[1] As, *e. g.*, Schleick, Addison and Oliver, mentioned above.

These cases show that any great inequality of the pupil in an epileptic depends on some localized intracranial trouble, *i. e.*, it is then not so much an epileptic as a focal symptom.

Of course it goes without saying that in plenty of cases of unilateral epilepsy there is no anisocoria.

2. Cases of slight inequality, and in which the condition is fairly constant.

This does not preclude some variation from one observation to a subsequent one. In a few cases the immediate effect of the seizures is noticeable, but even then it is rather to accentuate the condition than to develop it anew each time.

Of this form there were ten examples, indicating that it is more frequent in epileptics than the other two forms combined. In certain of these the difference was so trifling that the observation had to be independently corroborated before its acceptance. Doubtless in these cases the peculiarity is only functional. It might simply be classed as an exhaustion-sign, like the pareses seen at times after seizures, but for its greater persistence when once present. Sometimes in these first two forms the wider pupil was observed to re-act less than the other, indicating (according to Heddæus) that then the inequality was due to sphincter-paresis of the wider pupil.[4]

3. Latent anisocoria—distinct inequality only in faint illumination.

Various non-epileptic cases first convinced me that there is a frequent form of latent pupillary inequality—possibly not well recognized as yet—and that a more exact method of examination and specification might be adopted.

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[4] Dr. James Oliver (Brain, October, 1888, p. 359) says: "When the pupils are unequal [in epileptics], the last effort at accommodation may determine equality, the inequality only reappearing with the state of comparative rest. In testing the reaction to light, I have frequently remarked that, whilst the pupils may, in conjunction, react well to this excitation, separately the one more dilated will be found to contract with less certainty and less markedly than the smaller, and at the same time, manifests a greater tendency to return forthwith to its pre-existing state of dilatation."

These were cases of astigmatism, brain-tumor, old apoplexy with atrophy of one optic nerve (the most striking case of all), various other nerve troubles, and also individuals otherwise apparently normal. In these there was a more or less marked inequality during faint or poor illumination, but such inequality quite disappeared on strongly and generally illuminating both eyes.

Dr. J. C. Shaw also tells me of a case in a syphilitic ataxic in whom with scant illumination there was irregular outline as well as inequality of pupils, both abnormal conditions disappearing completely on exposure to strong diffused light.

To guard against the frequently deceitful effects of shadows, if lateral illumination be used in examining for slight degrees of this form, it should be tried alike from each side before deciding.

As a plausible explanation it may be suggested that whilst the passive (*i. e.*, sympathetic) innervation of the pupils is in such cases unequal or disproportionate, the reflex impulse—equal for the two eyes—is, when fully called into play, quantitively so far in excess as to completely overbear all passive ones and so for the time being to wholly dictate the pupillary condition. The relative superiority of the oculomotor control of the pupil, as compared with the sympathetic, is of course a matter of every-day observation.

This explanation interprets the morbid phenomenon as a symptom resulting not simply from bilaterally uneven sympathetic action, but as one that only appears at times when the action of the oculomotor is relatively or absolutely in abeyance.

Hence we should distinguish :

(1) A passive or latent anisocoria.

(2) An active or at least continuous inequality.

If possible, the type observed should always be specified. Of course the first two forms of inequality above described belong to the second of these classes.

Certainly, even with this precaution, it remains a relative matter so far as estimating the degree of illumination —and in some of these latent cases the visual power was greatly reduced in one or both eyes. The minimum limit is, however, furnished by the least illumination consistent with a proper inspection of the pupil.

Although most of these observations were in other troubles, this form was demonstrable in 2 of the last 50 epileptics; and a recent examination of an earlier case (still an epileptic) discloses a marked example of this. Doubtless, an ignoring of this matter in making examinations might give a certain diversity of results, although as a whole, an exclusively latent inequality is evidently not very common in these patients.

As a rule, including the epileptic cases, the inequality even in least illumination was very slight; but in one case (non-epileptic), it was as great as almost ever seen from natural causes.

Of the three classes of cases, it can confidently be asserted that in the present series, all those of the first class have been noted, and hence for this type they may serve as a proper average (1 in 50).

But at first, little attention was paid to the second and third classes. If, however, only the last 50 cases in the series be considered, it transpires that amongst these, pupillary inequality occurred 8 times (those of the first form all happened to occur in the first 100 cases). This gives 16% and agrees very well with that of Marie (15%) or that of Musso (22.8%). Together, these give 32 cases of anisocoria in 173 cases of epilepsy, or about 18.5%. In other words, it appears that on an average one epileptic in every five or six will, if examined with care, prove to have some, though usually slight, inequality of the pupils. As this conclusion is based on the fairly harmonious results of three observers in different countries, it is admissible to infer that those finding a smaller proportion must have simply overlooked the common slighter difference in size of the pupils.

FRIEDREICH'S ATAXIA; ITS RELATION TO CONDUCTING PATHS IN THE CORD.[1]

BY DAVID INGLIS, M.D., OF DETROIT.

WITHIN the past year I had the opportunity of presenting a case of Friedreich's ataxia, of which I made a full report at the last meeting of the Michigan State Medical Society.

In brief the case is this:

When the boy was four years old he had an attack of measles from which he did not promptly recover. He was unable to walk for seven weeks, after which time he began to get about, but showed an unsteady gait and was easily pushed over. During two years, from this time on, the history was that he had had occasional pains, which were not severe, but resembled "growing pains." The boy's gait, as stated, became unsteady from the time that he got up from the measles. Before that time he had learned to walk at the usual age, and had seemed in every way a normal child. His gait grew steadily worse, so that when I saw him, two years after the onset of the trouble, he presented in perfection, the whole picture of ataxia. When he attempts to walk he keeps his feet widely separated, his head and body bent forward, his vision fixed on the floor and his arms spread and instinctively trying to touch every object as he passes in order to give some little aid in keeping his balance as he totters zigzag forward. He seems to be perpetually falling or as if about to run. When he attempts to stand or even to sit erect without some support to his back, he sways continually. So marked is the loss of steady motor control, that when sitting in a chair he constantly holds on to the seat with both hands. If he closes his eyes he sways still more and, when standing, falls. In short, he presents both static and locomotor ataxy. In using his arms and hands the same unsteadiness is manifest. He can, indeed, perform almost any act, but when, for example, he buttons his coat the action is clumsy and slow, and not only the hand but the forearm and shoulder muscles are all brought into the effort. This inco-ordination of the upper extremities came on several months after the affection of the legs, and now, within the last two months, the inco-ordination has involved centres still higher up; for his speech has now become slow, monotonous and difficult. The mother claims that the boy's mind is as clear and bright as ever, but that he has difficulty in speaking.

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[1] Read at the annual meeting of the American Neurological Society, Washington, D. C., September 22, 23 and 24, 1891.

We have, then, to deal with a defect of co-ordination of wide extent, one which involves the entire muscular control from the legs up as far as the tongue and pharynx.

Meanwhile the lad's general health is good ; he is well nourished, has no muscular wasting; muscular strength is good.

The patellar reflex is wholly lost. Cremaster and pupillary reflexes normal. No defect of vision, no nystagmus.

As stated, the boy has had occasional trouble with aching pains, but examination of his sensory apparatus shows that it is in excellent condition. I have repeatedly tested him and find that his perception of touch, pain and temperature is both accurate and prompt.

Special senses normal ; electrical reactions normal ; no history of any impairment of his organic functions.

Such is the group of symptoms, and from it I have felt justified in classing the case as one of Friedreich's ataxia. I do so in spite of the fact that the hereditary character of the disease is not demonstrable. The boy is the oldest child, and no other case has occurred in the family. I should also state that his father is a man of good habits, and no neurotic inheritance can be elicited.

Friedreich in his original article summarized the clinical characters of the disease as follows :

" Impairment in the co-ordination and harmony of movements developing gradually and spreading from the lower to the upper half of the body, and always involving finally the organs of speech.

" Sensibility and the functions af the special senses and of the brain being intact, paralysis of the sphincters and trophic disturbances are absent ; less constant phenomena are, curvature of the spine, sensations of vertigo and nystagmus.

" From a clinical point of view we must regard the disease as a progressive paralysis of the faculty of combination of movements."

My case conforms accurately to Friedreich's description, and the absence of any family tendency up to the present time does not impair the classification.

My object, however, in reporting the case is not to discuss the differential diagnosis of Friedreich's disease, but to consider the bearing of the affection upon our views of the physiological anatomy of the function of co-ordination in the spinal cord.

There have been, so far, thirteen autopsies upon cases of Friedreich's ataxia: five by Friedreich, two by Rutimeyer and one each by Everett Smith, Pitt, Blocq, Letulle, Auscher and Menzel.

Pitt's description of the pathological changes in his case serves as a good basis of comparison, it is:

1st. The spinal cord is extremely slender.

2d. Extreme sclerosis of the columns of Goll in their whole length, from the lumbar enlargement to their termination in the floor of the fourth ventricle.

3d. Intense sclerosis of the posterior part of the columns of Burdach, in which, however, some healthy fibres are scattered.

4th. The zone of the columns of Burdach which bounds the corner and the posterior root is intact.[1]

5th. Sclerosis not distinctly limited (much less intense than in the posterior columns of the crossed pyramidal tracts.)

6th. Sclerosis of the ascending cerebellar tracts, visible up to the decussation of the pyramids. Very slight and irregular sclerosis of a few scattered fibres in the antero-lateral columns.

7th. Degeneration of the columns of Clarke in some sections.

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[1] Marginal zone of Lissauer.

8th. Degeneration of some fibres of the posterior roots and of the posterior corona.

Ladame, in his summary of nine autopsies, shows that there is a general agreement with such a pathological picture as that of Pitt, although some autopsies show the sclerosis to be less widely spread. In Friedreich's first case only the posterior columns were affected. The four autopsies made during the past year also conform very closely to the description. The columns of Goll are uniformly most affected, then the posterior part of Burdach's, the column of Clarke and direct cerebellar also pretty uniformly, the crossed pyramidal to a much less degree.

Auscher's case is probably the most instructive one on record, for the sclerosis was practically limited to the posterior columns, while the symptoms of Fredreich's ataxia were well shown. The patient had inco-ordination, but sensibility was normal. In other words, the the various forms of sensation were transmitted otherwise than by the posterior columns. When we consider the other autopsies the same thing is true, with the added fact of the almost invariable sclerosis of the direct cerebellar tract. In these cases, again, sensation remains practically unimpaired. In short, when all the tracts which degenerate upward are sclerosed, we find that patients are still able to secure conduction of sensory impulses; but in all alike we find the primary, the most important symptom, to be essentially a motor disturbance.

Notice also that the later and accessory symptoms are also motor. The speech defect, the scoliosis, the club-foot, the nystagmus—all are due to motor defect.

That the inco-ordination is not due to the sclerosis of the crossed pyramidal tracts is also demonstrated by Auscher's case.

All autopsies practically agree that the sclerosis of these tracts is less intense than in the posterior and cerebellar columns.

It would seem, from Auscher's case, to be probable that the sclerosis of the pyramidal tracts is a secondary and late process which does not reach the same completeness as does the destructive process in the other white columns.

In applying these facts to the elucidation of the functions of the cord, it has seemed to me that we must revise the current views upon the functions of the posterior columns, and possibly of the direct cerebellar.

Waller's discovery of the degeneration of system tracts has been invaluable as a means of differentiating the various tracts. It has given us a means of demonstration which far excels in accuracy any other method of dissection, but I contend that we have misinterpreted the facts revealed by the study of Wallerian degeneration. The tracts which degenerate upward are the columns of Goll, Burdach and the direct cerebellar. The assumption has been, and is, that such tracts convey impulses upward only.

There is no necessary connection between the course of the degeneration and the conduction of physiological impulses. It is simply a question of fact whether the two processes proceed in similar or opposite directions. That the three tracts named degenerate upward cannot be disputed.

The question is, do they convey any or all forms of sensory impulse upward, or do they convey other impulses downward?

It seems to me that the recorded autopsies of Friedreich's disease considered in connection with the symptomatology of the disease afford a demonstration that they do not convey upward.

We are driven to conclude that the function of the posterior columns and direct cerebellar is not to carry sensory impulses upward; and, certainly, by the facts of Friedreich's ataxia we are equally compelled to believe that they convey motor impulses of some sort. If motor, then in all probability they are downward impulses. That they are the main tracts for the conveyance of co-ordinated motor impulses seems to be the necessary corollary of the facts and symptoms of Friedreich's disease. The facts of embryology certainly tend to strengthen the theory. At the end of fœtal life, at a time when the crossed pyramidal tracts are undeveloped, the posterior columns and cerebellar tracts are complete. Their function evidently begins at once after birth. When we remember that the new born infant is characterized not by voluntary control of its muscles, not by accuracy of sense, perception, but by an extensive co-ordination of involuntary motor functions, the conclusion is easy that these tracts subserve these purposes.

Indeed, there are no other tracts developed at birth by which such co-ordination could be carried on.

To sum up: I would conclude that the posterior and direct cerebellar tracts do not convey any sensory impulses upward, except possibly that of the muscular sense.

2d. That the direction of Wallerian degeneration does not necessarily coincide with the usual direction of physiological impulses.

3d. That the posterior columns are the tracts by which co-ordinating motor impulses are sent downward from the cerebellum and mid-brain, and from higher to lower levels of the cord.

4th. That this theory of the function of the posterior and cerebellar columns is the only one which coincides with the embryological development, and is further borne out by the anatomical relations of the superior terminations of these tracts. Their connection with the cerebellum and basal ganglia is direct, with the sensory tracts in the internal capsule extremely uncertain.

THE BICYCLE IN THE TREATMENT OF NERVOUS DISEASES.

By GRÆME M. HAMMOND, M.D., New York.

THE value of systematic exercise in the treatment of many diseases is certainly not fully appreciated by the average physician, nor could it be fully expected to be otherwise, since it is notorious that physicians, as a class, take little or no active and regular exercise. Walking, and as little of that as will suffice in making his daily round of visits, is the only form of exercise which the busy physician imagines he can spare the time for; while such indoor exercise as is afforded by boxing, fencing, and the gymnasium, and out-of-door exercise, such as bicycle riding, horseback exercise and skating are practically unknown to him, and their therapeutic value is not grasped by his mind at all. Under such conditions it can be readily comprehended that the advice relating to exercise which the majority of physicians give to their patients is valueless. They are giving an opinion on a subject concerning which they are densely ignorant. Very recently a practitioner of this city, whose professional position is enviable, advised one of my patients, who was suffering from fatty degeneration of the heart, to spend most of her time lying down and to take as little exercise as possible. The advice was bad. Fatty degeneration of the heart like fatty degeneration of the biceps can be cured by appropriate exercise. Many physicians know this, but how many of them can conscientiously admit that they are competent to direct the physical training of a patient suffering from a feeble heart.

The subject of the therapeutics of exercise is so vast that it is practically impossible to cover the ground in a paper of ordinary length. I therefore propose to consider only one of the forms of exercise, namely, bicycling, and that only in its relation to the treatment of some forms of nervous disease.

Exercise when prescribed for nervous affections should preferably be taken out-of-doors. It must also be combined with pleasure, and should be prescribed not only with the view of strengthening the muscles, but also for its effect upon the mind. The effect upon the mind is often of greater importance than the effect upon the body. The feeding of the mind on self and the continual mental introspection which is so common in neurasthenia, hysteria and hypochondria should be combated by prescribing an exercise which necessitates the pleasurable concentration of the mind on what is being done, something which demands a certain amount of skill for its successful accomplishment, and which must therefore divert the thoughts from morbid channels, stimulate the mental faculties in a normal direction and engender a feeling of brain-rest and mental refreshment.

Such results can be obtained by the proper use of the bicycle. The facility with which almost any one can learn to use it, the exercise of skill required in guiding and controlling its course, the exhilaration which comes from rapid motion, the continual change of the panorama of the landscape, and the exercise of almost every muscle of the body make it an apparatus which not only develops the body, but is far more potent in stimulating a healthy cerebral activity and in arousing the mind from a lethargic condition than any medicinal remedy known to me.

Far different is the result obtained from the use of apparatus which physicians often advise patients to purchase and to use at home. After an individual reaches the age of twenty-five his exercise should be combined with pleasure. That factor of mental exhilaration must be present, or else the exercise simply consists of physical motions which soon become stupid and wearisome to the performer. The use of dumb-bells, Indian-clubs and home exercises of all forms soon becomes drudgery. The patient works at them faithfully for a few days with gradually increasing dislike. The exercise finally becomes repellent to him, and he ceases to perform it. This is the history of fully ninety per cent. of all the people, both well and sick, who with the most earnest intentions begin to exercise at home. The bicycle has therefore two uses as a therapeutic agent, one as a developer of paretic muscles, the other as a mental stimulant. In the former case the paralyzed individual is willing and anxious to use it, because while he is exercising his muscles he is at the same time enjoying himself.

I have prescribed the systematic use of the bicycle in sixteen different instances. Three of these were cases of paralysis due to anterior polio-myelitis; one was a case of paralysis resulting from multiple-neuritis, and one was a case of hysterical paralysis with slight contracture. Six were cases of neurasthenia. The twelfth case was one of sexual perversion, and the thirteenth case was one of abnormally developed sexual appetite.

The cases of paralysis from anterior polio-myelitis can best be considered together. In this group the object was simply to obtain stimulation and development of muscles which had degenerated both from disease and from disuse. It may be argued that in such cases any form of exercise, the performance of which calls into play the affected muscles, would be equally as efficacious as the bicycle. This would perhaps be true if the patient would invariably exercise under the supervision of an instructor who would see that the exercise was faithfully carried out, because people *will not* voluntarily go through stupid and uninteresting muscular movements day after day unless they are compelled to. This, however, is not the case with the bicycle. Those who learn to ride it learn at the same time to like it. They exercise voluntarily and enjoy it. After the art of riding is mastered the patient can exercise by himself without any supervision. Horseback riding, while it is an excellent form of exercise, cannot be indulged in by any one whose limbs are paralyzed to any marked extent. In cases I. and II., only the right leg was affected; in case III., both legs were paralyzed. In all three cases the disease seemed only to have affected those cells supplying the extensor muscles of the foot and toes. The muscles of the thighs were much weaker than they should have been, were smaller than normal, and were soft and flabby. This condition I attributed solely to disuse, as the electrical reactions, though diminished quantitatively, were qualitatively normal. Case I. was a girl of twelve years of age, whose right leg had been paralyzed for five years; case II. was a lad fourteen years of age who also suffered from paralysis of the right leg which dated from his seventh year; case III. was a lady who is now about thirty years old. Both legs had been paralyzed since she was six months old. In the latter case the tendons of both gastrocnemii had to be cut to overcome a well marked talipes equinus of several years' duration. In all of these cases walking was performed with great difficulty owing to the atrophy and paralysis of the thigh muscles. Mounting the stairs was impossible in one case and accomplished with great effort in the other two cases for the same reasons. None of them could support the weight of the body in a standing position if the knees were ever so slightly bent. In the first and second cases the muscles of the left leg were undeveloped and much weaker than they should have been, though the muscles were not affected by disease. I prescribed the use of the bicycle in these cases three times a week, only allowing them to ride for a few minutes at a time. When muscular tissue is degenerated either from disease or disuse its cultivation must be carefully conducted at first. Over-use of a degenerated muscle only advances the process of degeneration, both of the muscular tissue itself and of the spinal motor cells which supply the muscles used; while on the other hand, intelligent use of the muscles is conducive to healthy stimulation and subsequent development. The development of muscular tissue is a slow process even in a healthy person. It is particularly slow where the muscles are degenerated. As the strength of the limbs gradually increased, I permitted the patient to ride for a longer time.

CASES I. and II. have now been riding for over a year. For the past six months they have ridden daily out-of-doors when the weather was not too inclement. The effect on the muscles of the legs is well marked. The thigh muscles which were simply paralyzed from disuse and were formerly soft and flabby are now firm, fairly hard, and are fully as strong as those of the average person. Both the patients can mount the stairs easily, can support their weight with the knees bent, and can walk very much better than they formerly could. In regard to the paralyzed muscles the improvement is not so marked. Electricity has frequently been used on these muscles, hence what improvement has been obtained in them cannot be said to be due entirely to the bicycle, though, unquestionably, it has been of material aid. The muscles are stronger, and there is more mental control over them than there was a year ago. I am confident that one or two more years of cultivation will show even more decided improvement.

CASE III. was only able to continue her bicycle instruction for a few months, but even in that time her limbs were perceptibly strengthened. When she takes it up again I feel confident, judging from the other cases, that the development of her muscles will be proportionate to the time she devotes to the use of her bicycle.

CASE IV. *Multiple neuritis.*—The patient, a man thirty-two years of age, was first seen by me in December, 1890. He was a typical example of the disease, which was undoubtedly of alcoholic origin. Both legs and both arms were almost completely paralyzed; the flexors of the fingers and toes were capable of some slight motion; the muscles of both arms and legs were atrophied; the nerves were hard and tender; and there was a great deal of spontaneous pain in both legs. There was a loss of tactile sense and pain sense, the patient not feeling the prick of a pin or a cut with a knife; but severe pains were experienced if passive movements of the extremities were made. The electrical reaction of degeneration were well marked. Under appropriate treatment the neuritis gradually subsided, leaving the muscles greatly weakened and atrophied. Soon after the power of standing and walking was regained and a fair amount of strength had returned to the arms, I sent him to Bidwell's Bicycle School. For the first few days he rode three times for periods of five minutes each, with five minutes' rest between each ride. At first he had not sufficient strength to propel the bicycle and could only move it with the teacher's assistance; but the improvement in the muscular strength was rapid, and as the strength increased the time devoted to riding was lengthened and the period of rests reduced, so that in twelve days he could ride for half an hour uninterruptedly. From this time on his improvement was even more rapid, and in ten days more his strength seemed to have reached its normal condition.

Exercise in any form should not be prescribed in cases of neuritis until all evidence of inflammation of the nerves has subsided and the period of regeneration has set in. Electrization of the muscles is, in my opinion, greatly inferior to bicycle riding as a muscular stimulant and developer. In one case the growth of the muscular fibre is produced artificially, and is therefore slow and imperfect; in the other, the development follows the laws of nature and the muscles are exercised through the will power, the motor impulses being transmitted through the nerves as fast as their regeneration makes transmission possible.

CASE V. *Hysterical paralysis with slight contraction.*—The patient, a young lady fifteen years of age, with a decidedly neurotic family history, was suddenly taken with complete paralysis of the right leg while at school. The physician who attended her at the time informed me there were no disorders of sensibility. When I first saw her, about three weeks after the onset of the paralysis, the limb was motionless, and slight contracture of the flexors of the leg was perceptible. There were no disorders of sensibility, nor was there any evidence of an organic lesion. I prescribed the use of the bicycle daily for half an hour at a time. At first it was necessary to strap the foot of the paralyzed leg to the pedal of the bicycle in order to keep it in position. She was encouraged by the teacher, under my instruction, to continually make every mental effort to use the paralyzed limb, the sound leg being strong enough, with slight assistance from the teacher, to propel the machine. Thus she was receiving passive exercise of the paralyzed leg, together with alternating stretching and relaxation of the contracted muscles, and at the same time was being urged to make volitional muscular efforts. The treatment was successful. Muscular movements were made slowly at first and seemingly with great difficulty, but gradually the mind regained control of the muscles and a cure was established. I have recommended the steady use of the bicycle in this case with the idea that systematic out-of-door exercise will, by physical development, eradicate any tendency to a recurrence of the attack.

CASES VI. to XI. inclusive, were cases of neurasthenia. Five of them were men, one was a woman. The usual symptoms which are so familiar to the neurologist, such as insomnia, vertigo, depression of spirits, fulness or pressure in the head, dyspepsia, constipation, irritability of temper, loss of energy, and the host of other minor symptoms which, when taken collectively, tend to make life a burden to their possessor, were present in these cases. In the majority of instances, anxiety, worry or trouble of some kind was responsible for their condition.

In an individual with a strong and vigorous body, and who is accustomed to take a great deal of out-door physical exercise, small annoyances, and even troubles and griefs of considerable magnitude, are borne with a mental courage and fortitude which ordinarily can be but feebly reproduced in those who are physically undeveloped. There is a buoyancy of spirit in the strong and healthly which rises superior to the onslaught of troubles, while the individual of sedentary habits, or who never has felt the courage which goes hand-in-glove with health and strength succumbs sooner to the troubles which fall to the lot of nearly every man and woman. The development of the symptoms of nervous exhaustion follows as a matter of course. The plan of treatment for the relief of such cases is to strengthen the mind and the physical system at the same time. The direct cause of the disease cannot always be removed. Worry and trouble are things which cannot be relieved by a physician's prescription. But the intelligent physician aims to so strengthen the mental vigor of his patient that his brain will regain the power to assert itself and perform its functions in a natural manner. This can undoubtedly be accomplished by appropriate medicinal treatment. But this is not all. Physical development leads to a certain form of mental development. With increasing strength comes greater courage, perseverance and tenacity of purpose, and when physical exercise can be combined with a pursuit which is not only pleasant, but which must necessarily engross the mind and thereby lead it away from morbid thoughts, and from that introspection which is usually so prominent a feature of neurasthenia, we have a remedy which as an adjunct to appropriate medicinal treatment is an ally which is worthy of a great deal of consideration. In the bicycle we obtain a combination of physical and mental exercise which meets the requirements of the case more thoroughly than any other form of treatment. The six cases referred to in this paper always speak euthusiastically of the benefit they received from the bicycle. They returned from their rides physically tired, but mentally refreshed. Comparing these cases with other similar cases who did not use the bicycle, I am forced to admit that the recovery of the latter might have been materially accelerated if the bicycle had been prescribed. Neurasthenics should begin to ride out of doors as soon as they have learned to manage their wheel well enough to retain their equilibrium without assistance. They should be encouraged to ride for as long a time as they can without experiencing great fatigue. Beginning with a moderate ride of a mile or two, the distance should be rapidly increased till from ten to twenty miles are covered in a morning or afternoon's ride. If the companionship of other riders can be obtained, so much the better, provided they are not neurasthenics. The longer the ride and the more unfamiliar the scenery, the more the patient's mind is diverted from self and the thought directed into more varied and healthful channels. Patients with neurasthenia should therefore be instructed to take long rides at a moderate speed, and to vary the direction of their travels as much as possible.

CASES XII. and XIII. both suffered from abnormal sexual appetites. Case XII. a young man, twenty-four years of age, had observed for the past year a gradually increasing desire for members of his own sex. He had been able to control his appetite so far, but was fearful lest it should finally overcome him and lead him to perpetrate acts which were naturally abhorrent to him. Case XIII. was a man, thirty years of age, whose naturally vigorous sexual appetite had been fed by indulgence, till it seemed as if the gratification of his desires was his only object in life.

I have observed during my twenty years experience among athletes, that physical fatigue is antagonistic to the sexual appetite, and that men who devote their lives to the cultivation of their physical strength are seldom, if ever, immoderate sexually, and during the periods of active training are often abstemious simply from lack of desire. Energy, which, in others might be expended sexually, is in them consumed by hard physical work. It has, therefore, been my custom in those cases, in whom I have considered it advisable to diminish or to abolish the sexual appetite, to prescribe severe and fatiguing exercise in conjunction with suitable medicinal treatment. I have found nothing more serviceable than the bicycle to accomplish this object. It should be used daily, preferably in the afternoon, and the patient should be directed to ride long distances at a rapid rate of speed, not carrying it to such an extent as to produce exhaustion, yet sufficiently so to induce well-marked fatigue.

Both of these patients have repeatedly told me that a hard ride would invariably abolish all sexual desire, even if the appetite was at its strongest just before the ride was taken. Of course, medicinal treatment was administered in both instances; but there can be no doubt that their recovery was hastened and facilitated by the hard physical labor they were subjected to by the use of the bicycle. These thirteen cases cited are not by any means the only ones in which the bicycle has been advantageously employed, but they represent three different classes of disease, all of which were benefited by the bicycle, and yet in each class the manner of using it was different. What would have been considered the immoderate and injudicious use of a remedy in one class of cases, was only attended by good results in another. For the guidance of those who may consider it expedient to use the bicycle as a remedy, the following suggestions may be useful:

It is best, in most cases, to have the patient taught privately. Indeed, this is essential in cases of hysteria and neurasthenia, particularly when the subject happens to be a woman. The nervousness, agitation and fright, which pervade all nervous women and most nervous men at the bare possibility of taking their initial lessons before an audience, is in itself sufficient to neutralize any benefit which might be derived from the exercise; while on the other hand, if the lessons are taken with only the patient and the teacher in the room, the feeling of trepidation soon vanishes, and gives place to those of enjoyment and exhilaration. In such cases I would not even permit the intrusion of intimate friends or relatives; of course, if the case is one of simple paralysis these restrictions do not apply. The teacher should be a man of discrimination, who understands, that he is not only giving a bicycle lesson, but is also dealing with a case of sickness. Most of my patients were taught by a special teacher at Bidwell's School, who, acting under my instructions, exercised both tact and patience with his teaching, and materially aided me by his encouragement of fretful or despondent patients. It seems to me that all physicians who desire their neurasthenic or hysterical patients to take bicycle lessons, should carefully instruct the teacher in regard to his management of the case. Impatience and irritability on the teacher's part, often discourage patients who might have been greatly benefited by judicious management.

As comfort is essential to pleasure and contentment, a bicycle should be selected which combines fine workmanship and smoothly running parts, with the least amount of vibration, while traversing rough or uneven roads. A bicycle which works stiffly, or which "squeaks," or where the saddle is uncomfortable are often matters, which though trivial to the healthy individual, are of the greatest annoyance to the sick. One of my patients, a hysterical man, was one day so annoyed by the continual "squeak, squeak," of his pedal every time it revolved, that he finally burst into tears, dismounted, left his bicycle in the road and returned home in the cars, in a highly hysterical condition.

At the present time the pneumatic tired machine is the most comfortable. Rough roads can be traversed on it with very little jar or vibration. It is particularly to be desired for women. The American, or Thomas tire, as it is called, is superior and more enduring than any tire that is imported. The weight of the bicycle is a matter of importance, and should be carefully determined by the weight of the individual who intends riding it. A heavy person is liable to break a wheel which is too light for him; on the other hand, it is not advisable for a person, especially if he is not strong, burdening himself with more weight than is necessary. The selection of the weight of the wheel had best be left to Bidwell.

In riding, the body should not be inclined forward, at least, only to a very slight degree. In racing, undoubtedly greater speed can be attained when the body is bent almost at right angles with the legs; but with the invalid in search of health the case is different. The attainment of great speed is not the point to be gained. He should sit in a natural and easy position, with the chest out, and the head well up, so that respiration can be carried on to the best advantage.

If physicians would study the bicycle as a remedy and prescribe it intelligently, they would often find it exerting a beneficial influence far in excess of their expectations.

PRIMARY HÆMORRHAGE OF THE LATERAL VENTRICLE.

By CHARLES L. DANA, M.D.

[Contribution from the Neuro-Pathological Laboratory of the New York Post-Graduate School.]

PRIMARY hæmorrhages into the lateral ventricles of the brain are so extremely rare that their symptomatology possesses interest. I feel justified, therefore, in publishing the following case, with the record of the autopsy:

Henry C——, aged sixty-one, Swiss. The man had been in rather feeble health, but had no special disease. It is not known whether he had had syphilis, nor are his previous habits known.

Four nights before admission he fell out of bed. He was picked up in a stupid condition and remained so until brought to the hospital.

On admission he was in a semi-comatose state, but could be roused; answered a few questions and even got out of bed and stood with some help. Heart and urine normal. His face was rather suffused; his pulse normal. His pupils somewhat contracted, but even. He could articulate and swallow. He had no paralysis, no anæsthesia, no rise of temperature on either side. His knee-jerks were normal. He lay quietly in bed most of the time. Two days after admission, his stupor was deeper and his temperature rose to 100.3° F. Next day the patient became comatose; temperature the same; breathing at times stertorous. On the third day the temperature rose rapidly and steadily from 101° to 105.5° F. The coma was profound, the breathing stertorous, and toward the last assumed a Cheyne-Stokes character. He died during the night, seven days after his attack came on. No paralysis could be noted at any time in face or limbs.

Autopsy.—Externally, body in general condition of obesity. Rigor mortis well marked. Heart enlarged; weight, sixteen ounces. Valves thickened. Pericardium contains normal amount of fluid. Lungs œdematous; numerous dense adhesions. Left lung very œdematous; right in condition of tubercular infiltration. Liver cirrhotic; small size. Kidneys, seven ounces. Slight chronic diffuse nephritis. Stomach and intestines normal. Brain, weight forty-seven ounces. Hæmorrhage was found filling the right ventricle only, extending slightly through foramen of Monroe into third ventricle. The hæmorrhage was due to the rupture of a superficial vein in outer and anterior part of optic thalamus. A superficial area of tissue was torn up about two by two and a half inches in extent, involving the anterior and outer part of optic thalamus and outer and posterior part of corpus striatum. Blood-vessels of the brain greatly distended and showed chronic arteritis. Convolutions flattened. The amount of effused blood was about three or four ounces.

Remarks.—The chief characteristic in this case was *the stupor and mental sluggishness of the man.* He acted much like a person drugged with opium who wished to be let alone, and who could not and would understand questions put to him. The symptom is common in moderate brain compression from *the interior*, as in tumors involving the callosum and ventricles. The absence of hemiplegia showed that only the superficial parts of the basal ganglia were involved and that the capsule was intact.

TETANOID CONVULSIONS IN AN INFANT: OPERATION; RECOVERY.

The Centrall f. klin. Med. refers to Dr. T. R. Ronaldson's case in which a healthy child, normally born, but with an uncommonly thick umbilical cord, remained in perfect health until the ninth day, when on the eleventh day, tetanus developed. On examining the umbilicus it was found black in color and very foul-smelling. Symptoms of in-inflammation were not present. The convulsions occurred from time to time. During the intervals the child seemed to be well enough, and was able to take the mother's milk. The stump was washed several times daily with a sublimate solution and every precaution was used to prevent a recurrence of the attacks without avail. On the twenty-third day the author performed excision of the naval which was followed by a gradual disappearance of the seizures, they becoming less frequent from day to day and at the end of the seventh week, the attacks had entirely ceased and the child was perfectly well. There were no micro-organisms found in the excised umbilical stump. (Edingb. Med. Journal.) B. M.

Neurological Digest.

CURRENT ANATOMY, PHYSIOLOGY AND PATHOLOGICAL ANATOMY OF THE NERVOUS SYSTEM.

BY JOSEPH COLLINS, M. D.

ON THE PATHOLOGICAL ANATOMY OF CHOREA MINOR.

Dr. Wallenberg (Archiv f. Psych. u. Nervenkrank., vol. xxiii.). The author gives at first a brief review of the anatomical investigations that had been made in chorea from the time when Broadbent first published his views, regarding it as a disturbance of nutrition in the corpus striatum and optic thalamus manifested or resulting from capillary emboli, and so propagating the "embolic theory of chorea." Quoting from Elischer's paper (Virchow's Archives, vol. lxiii.), he says the corpus striatum showed irregular bodies sharply outlined, with strong refractive property, which clung to the interior of the blood-vessels in mulberry-like groups, laid one above the other, and regarded by him as composed of amyloid material. Elischer laid but little stress on these bodies, and his observations seemed to pass unobserved till Flechsig in 1888 confirmed these results and reported four cases, localizing the pathological change in the globus pallidus. Later Jokowenko, a pupil of Flechsig, published the results of the examination of six brains from persons who had died of acute delirium with chorea. In all cases he found in the lenticular nucleus, especially in the second divisions; that is, the outer part of the globus pallidus, bodies corresponding to those reported by Flechsig. These bodies gave the reaction of hyaline as described by Recklinghausen.

With the idea of settling the question as regards the pathological changes in chorea minor, Wallenberg divided his anatomical work into two parts : First, the examination of the brains of six patients who had died with chorea; and second, forty-six brains from patients who had never presented choreic symptoms during life.

The results were as follows :

(1) In some cases of chorea—and it was the same in simple chorea as in the so-called chorea with delirium—I

find in a definitely limited district of the lenticular nucleus (the globus pallidus, not the putamen) numerous strongly refractile substances of roundish form which were very resistant to coloring matters and reagents, and which were for the most part laid along the sides of the blood-vessels in a peculiar way.

(2) These substances are in no way characteristic of chorea ; for they are found exactly similar in the brains of individuals who had never suffered from chorea.

(3) These substances must be considered in all probability to be the calcification of an organic ground-substance, concerning the nature of which no positive opinion can be given.

These bodies do not give a reaction with alcohol, ether, Lugol's solution, osmic acid, nor liquor potassa; but in one case the action of acetic acid seemed to give a clearer idea that they were made up of concentric layers. By treating with sulphuric acid, the substances seemed to clear in small needle-shaped bodies, and then be dissolved. The action of hydrochloric acid was somewhat uncertain. In three cases it dissolved the substances altogether; and three other cases only the larger bodies. From a consideration of these experiments Wallenberg reaches the conclusion that they are of the nature of an organic ground-substance of a peculiar lime formation that is not completely dissolved by these reagents, comparable, for instance, to the contents of the pineal gland. This substance was not stained in the least by the presence of carmine or Weigert's fibrin stain. With hæmatoxylin ferrocyanide it was colored darkish gray verging on black; colored with acid fuchsin-aniline water, and decolorized with picric acid this substance was of a dull red color. Therefore the author thinks it is not justifiable to consider them of a hyaline or fibrinous nature.

The article is illustrated by two very excellently executed plates, which assist materially in the comprehension of the anatomical changes described by the author. A rather complete list of the literature of chorea since 1874 is appended to the paper, a perusal of which and the article it is to be hoped will stimulate other investigators to determine the essential histological changes in this very complex disease.

These experiments of Wallenberg's give evidence of being scrupulously performed and reported, and will, no doubt go a long way in corroborating the opinion that is probably held by the majority of pathologists that these changes described by Elischer, Flechsig, and others are by no means characteristic and are generally to be considered as concomitants of chorea. Almost every conceivable small lesion has been reported by trustworthy writers ; from areas of hemorrhage and softening in the cerebrum as by Tucknell,to probable marked primary changes of nutritiou in the cortex by Dana, and calcification of Purkinje cells in the cerebellum by Golgi, and innumerable others locating the various lesions in the various parts of the central and peripheral nervous system. The greatest rational objection to belief in an extensive central pathological change in chorea is a consideration of the statistics as regards prognosis, the death-rate in this disease being not more than two or three per cent., and then again the duration of the disease is rarely more than two or three months, which if most of the pathological changes that are described were a constant factor this state of things would be inconceivable. If, as it was formerly thought, it could be proven that there was an arrangement or a rearrangement of motorial impulses originating in the cortex in the corpus striatum, then Elischer's views would command more attention; but this hypothesis has no foundation. Again reasoning from the complexity of motorial symptoms, those views which ascribe a primary nutritional change in the cortex, varying in intensity from the slightest which accompany the cases ending in recovery to the very severe ending fatally, would seem most probable. Necessarily these cortical changes do not forbid that there should be other changes in the cord and perhaps nerves; for like changes are a most common secondary condition in other affections of the cortex. Then fright is unquestionably the most potent factor in exciting chorea. Whether or not this is merely the element that sets in activity the machinery that is already prepared by changes that have gone on preceding it in the cortex, or whether the psychical trauma is in itself sufficient to set up those changes in a field that is already prepared for it by inherited neuropathic predisposition and other concomitant factors can only be a mere matter of theory. Some light can probably be thrown on this problem by experimental lesions in those animals possessed of brains that are well known and in the artificial production of chorea.

THE CLINICAL AND PATHOLOGICAL CHANGES OF MULTIPLE "ALCOHOL NEURITIS."

R. Thomsen (Archiv f. Psychiatrie u. Nerven., xxi., 3, p. 806). The author relates three cases presenting symptoms of multiple neuritis apparently due to the ingestion of alcohol, in which careful examination was made after death. The first case occurred in an alcoholic twenty-four years of age in which the symptoms of multiple neuritis ran a very rapid course, death occurring eight days after the patient entered the hospital. At the autopsy the examination of the cord and bulb gave no result other than normal, and integrity of the roots of the cranial nerves. Although during life the patient had presented abnormal rapidity of the heart's action, ptosis on the left and double paralysis of the motor oculi external and nystagmus. The lesions in general were those of an extensive polyneuritis with degeneration of the muscles; this last, however, of secondary importance.

In the second case there was made during the life of the patient a diagnosis of tabes dorsalis. For six years the patient had complained of constriction and the iron band sensation,with incontinence of urine, and he presented complete abolition of the patellar reflexes. As for the other symptoms, there were amblyopia, paralysis of the oculomotor external, nystagmus, delirium and convulsive manifestations. At the autopsy the cord and roots of the cranial nerves were found in a state of perfect integrity.

In the third case the symptoms were those of an alcoholic polyneuritis with ptosis, nystagmus and tachycardia. This last symptom was probably caused by a hæmorrhagic focus which occupied the posterior root of the vagus nerve. The ptosis might also be explained by the presence of a small hæmorrhagic focus in the neighborhood of common oculo-motor nerve. On the contrary, the root of origin of the oculo-motor external and the territory around it was intact. It is true that the paralysis of the oculo-motor external had its reason of being in the alteration which had gone on in the central gray substance in the neighborhood of the aqueduct of Sylvius.

It would seem to be quite thoroughly proven that alcohol when taken for any considerable period has a special predilection for the peripheral nerves, but although many and able investigators are at work on this problem the conclusions that can be drawn from their labors are incomplete, for the reason that during life the clinical symptoms are not closely observed and recorded. For instance, in the second case reported above, where a diagnosis of locomotor ataxia was made, if the paræsthesia and motor symptoms had been accurately noticed, it would have been a valuable item in showing whether or not the motor nerves are most readily affected. In the experiments that have been recently performed by Spaink in this direction, he describes a twisted condition of the axis cylinders which the writer has seen in some experimental cases and which it is to be hoped will be corroborated or denied by other investigators.

THE CONFORMATION OF THE SKULL.

The conformation of the skull has always been a fruitful theme for discussion relative to the cerebral development and its functions. Some time since Bullen made an investigation of the skulls of 1,565 patients who had died at the Wakefield Asylum. He says that the irregularities of the cranium have been frequently noticed, but the main one has been that of lack of symmetry. Of the entire number of cases examined more than one hundred had some form of irregularity. The large skull—either square or circular—is met with oftenest in maniacs. The elongated occurs more frequently in cases of general paralysis and epilepsy; and those cases in which the vault resembled a dome were found, particularly in cases of mania and some cases of general paralysis. In cases of melancholia there seemed to be a special development of the frontal region, while in syphilis a lack of development in the frontal region was the most striking feature.

The anomalies in shape which would seem to indicate an inferior condition were found in totally different cases, as, for instance, in imbeciles and others where there was normal development of the faculties. Lack of symmetry was found in 20 per cent. of all the cases examined and was demonstrable by some anomaly in the conformation of the frontal, parietal or occipital regions manifested by a diminution of capacity of the sides of the skull or by a kind of torsion by which one side advanced forward more than the other. The first variety, that in which there existed a local malformation, was found in 40 per cent. of all cases in which lack of symmetry was found, and it occurred on the left side twice as often as on the right. The temporo-parietal and parieto-occipital region presented 30 per cent. of these malformations, the majority being as with the others on the left side, although the cases in which the projection of the right frontal region over the cranial anomaly was just double that of the left. The capacity of one-half of the skull cavity was increased in 50 per cent. of the cases, the majority being on the right side, and when the right side was more voluminous there was observed a superiority of the frontal region of the same side and coincident with a superiority of the tempero-parietal region of the left side. This lack of symmetry was greatest amongst cases of chronic melancholia, next in epilepsy, and least amongst those of general paralysis. The capacity of each half of the skull did not always correspond with the size of its cerebral hemispheres, in fact a small cerebral hemisphere often occupied a comparatively bare half of the cranium. In a series of twenty-nine cases of dementia the right hemisphere was the larger, fourteen times out of twenty-three, while the diminution in the capacity of the right side of the skull occurred seventeen times to twelve of the left side. In twelve of these cases only did each half of the skull correspond in size to the cerebral hemisphere.

The author also examined the membranes, convolutions, blood-vessels, etc., and gives an interesting array of figures for the different mental affections and different ages.

ON THE ETIOLOGY OF PERIPHERAL FACIAL PARALYSIS.

Dr. S. Goldfan (Neurolog. Centrallb., vol. xvi.). The author considers four cases of facial paralysis occurring in syphilitic subjects. The symptoms referable to the facial nerve coming on a very short time after the primary lesion; that is, before or during the stage of roseola. The symptoms presented themselves in the first case in thirty-five days; in the second, in three months; in the third, in fifteen days; and in the fourth, in twenty days. In one of the cases an ordinary attributable cause was present, namely, exposure to cold; but this was very slight. In the second the patient, an actor, had simulated toothache on the stage the evening previous, pressing against the side of his face with his handkerchief. In the remaining two cases no attributable cause could be assigned. Facial paralysis occurring during the third stage of syphilis is ordinarily not a difficult matter to explain, for it may be due to gummata, basal meningitis, periostitis, exostosis, caries of the petrous portion of the temporal bone or changes in the trunk of the nerve itself; but the author finds it difficult to explain how it occurs in cases where all these factors can be ruled out. Lang's hypothesis, that is, that during the appearance of the syphilitic exanthem there is a coincident infiltration into the basal meninges or the central nervous system itself, which is sufficent to account for the peripheral paralysis. This the author considers untenable. The only light he can throw on the problem is expressed by saying that under the influence of the syphilitic infection and in the very early stages of the disease, particularly during the period of eruption, there exists a marked disposition on the part of the facial nerves to peripheral inflammation and paralysis.

KATATONIE.

W. Julius Mickle (Brain, Sept., 1890). The author concerns himself in this paper with a report of the necropsy of an individual whose case was reported in the same journal for September, 1889. The patient's history and symptoms at the time when the diagnosis of katatonie was made are briefly as follows: A young man, twenty-five years of age, single and of good habits, the son of a very nervous and easily agitated mother, had been convicted of robbery and was for some years in prison. Presents severe mental symptoms. Would stand in one place for hours silent and immobile, or would go through rhythmical movements when so standing, as, for instance, moving the head forward and backward or to the right and left regularly and methodically, flexing and extending the forearm. Again, he would start to go somewhere and retrace and trace his steps and do other things without purpose, as for instance persistent opening and closing of a door. He was not suicidal, epileptic or dangerous, but occasionally had periods when he was destructive. Was well nourished, muscular and viscera fairly normal, cranium widest posteriorily, narrow forehead and prominent frontal eminences. No external syphilitic manifestations. Would not obey when commanded, and had periods when he would be silent for several days; would not reply to questions; and then again his speech would be of a stereotyped and theatrical character, foolish and non-pertinent. Thought spirits talked with him, and he could see nude forms; knee-jerks fairly normal and muscles sometimes in a more or less cataleptic condition, and under passive motion limbs move with a kind of stiffness. The patient died of influenza of the congestive or pneumonic type. The marked symptoms preceding death being dyspnœa, respiratory and pericardiac oppression, bluishness of face and lividity. The principal noteworthy points in the necropsy record were as follows:

(1.) The deviation from the normal type, or atypical peculiarities, of cerebral fissures and gyri in relation to the patient's criminal and insane antecedents.

(2.) In relation to katatonie, the existence at the anterior part of the inferior and mesial surfaces of the cerebral hemispheres of patches which have been termed "adhesion and decortication," namely, adhesion of pia to the brain and separation of the superficial layers of the gray matter where the membranes are stripped off.

(3.) Slight thickening and opacity of the pia-arachnoid over the base of the brain, and the great thickening, toughness and opacity over the supero-lateral and fronto-parietal region, with corresponding pial œdema, over easy removal of the meninges and wasting of the gyri.

(4.) The cortical microscopical appearances.

(5.) Brain generally firmish, congested probably by the final illness and mode of dying; some evidence of old hyperæmia.

(6.) Thick, heavy calvaria of rounded triangular shape in transverse section, the rounded apex representing the forehead.

Katatonie is a name suggested by Kahlbaum, and from its origin signifies tension, and its applicability was based on the fact that, with a certain symptom complex such as the above, tension or a minor form of cataleptic condition of the muscles was a prominent symptom. Kahlbaum's conception of the disease designated as katatonie is a large one and might be considered as a form of mental derangement progressing from melancholia, through mania and stupidity, to imbecility and tonic convulsions. Other writers on the subject are not wont, however, to give such a comprehensive meaning to this condition, but merely classify it as a psychoneurosis or at most a hereditary neurosal and mental degeneration. The disease is as yet but little known and studied in this country, but the symptoms as given in the above case are fairly typical. The disease is not marked by a clearly delineated clinical picture. The peculiar rotating different mental states manifested facially, oratorically, psychically, or by different movements and gesticulations, and the cataleptoid condition of the muscles are, however, the main points in the diagnosis.

It is to be hoped that Dr. Mickle will give us later a minute description of the microscopical changes found in the central nervous system, so that we may get a step nearer to a clearer conception of the pathological conditions present, particularly as regards the nature of the changes that take place, whether they be nutritional, degeneratory, inflammatory or wholly non-developmental.

THE ANATOMICAL CONDITION FOUND IN THE BRAIN OF A PATIENT DYING OF CARBONIC-OXIDE POISONING.

A rare condition is reported by Dr. C. Cramer, in the Centralb. f. Allgm. Path. u. Pathol. Anat., vol. ii., 1891, of a woman seventy-one years of age who suffered from the results of carbonic oxide poisoning, the symptoms lasting for over a month. The poisoning resulted from premature closing of a stove damper, and the patient was found some hours later in an unconscious state, pulseless, and with extremely weak, feeble breathing. The unconsciousness lasted for three days. A week later the patient's mind became entirely deranged, and then she passed into a general apathetic condition, the pupils equal and reacting shortly, and a slight hyperæsthesia over the entire body. A fortnight afterwards the patient had an elevation of temperature with frequently repeated exacerbations. This continued for several days, the patient gradually sinking into a typhoid state and dying apparently from asthenia. On post-mortem examination the sinuses of the dura mater were found to be distended, and the pia mater over the convexities had lost its normal glistening appearance, and its blood-vessels were also very much distended. No marked loss or change in the substance of brain. The cortex and gray substance of the ganglia of the caudex cerebri were much redder than ordinarily, and the white substance peculiarly tough and resisting.

Miscroscopically, the tangential and supraradial layers of the cortex were clearly seen to be degenerated, resembling the condition found in senile dementia. Spread throughout the cortex were found numerous granular-like looking little bodies. The capillaries showed budding processes and the ganglionic cells were diseased. Spindle-shaped cells were sparsely scattered through the cortex, and the large vessels were for the most part normal.

Toward the centre of the cortex the spindle-shaped cells were largely proliferated, and in the basal ganglia pons and medulla a part of the blood-vessels were degenerated and in a small spot at the floor of the aqueduct of Sylvius a proliferation of neuroglia was found.

Before the onset of the symptoms the patient had given no evidence of beginning senile dementia or general paralysis, and on this ground the author is inclined to refer the changes to the carbonic-oxide poisoning; whether it was the primary or secondary cause it is impossible to say. The case illustrates further how very prone the medullary fibers of the cortex are to degeneration from noxious or pernicious influences.

CIRCULAITON—THE CONDITION OF THE CIRCULATION OF THE BLOOD IN THE BRAIN DURING AN ATTACK OF EPILEPSY.

Prof. W. S. Bechterew has recently reported some experiments on the condition of the circulation in the brain during attacks of epilepsy produced artificially in dogs, which are published in Neurolog. Centralb., No. 22, 1891. The epileptic attacks were produced from irritation of the cortex cerebri by the electrical current or by the introduction into the circulation, through the femoral vein, of essence of absinthe, cinchonia or cinchonidin. Then, after trephining, the state of the vessels were observed these openings made over the motor areas or the occipital or laterally, in which was fitted a piece of glass so that they could be observed with the naked eye or by the use of a lens.

During the epileptic phenomena the smallest blood-vessels of the pia in the field of observation were seen to be distended, the brain substance became reddened and enlarged so that it pressed up against the glass. This distension of the brain substance passed away very gradually till the brain reached its normal condition, the blood-vessels that were most severely congested remaining the longest, and not disappearing till the animal was in a comatose condition.

These changes were more sharply marked when the epilepsy was induced by injecting irritants than when brought about by the electrical current.

The blood pressure determined in the circle of Willis and the carotid showed in the beginning of the tonic period there was ordinarily an elevation in the blood pressure in both ends of the arteries and a strange elevation at the cerebral part as determined by the manometer (the method of Hurthle was used in determining blood pressure). This blood pressure reached its gradual height about the end of the tonic period. At the appearance of the clonic stage the blood pressure began to fall gradually, more strongly at the ends of the artery than peripherally, and at the end of the attack the pressure reached normal. Coincident with the changes in the blood pressure in the carotid were marked changes in the strength and rapidity of the heart and respiration. At the beginning of the tonic state a more or less distinct slowness and increase of strength in the heart and pulse beat was noticed. Ordinarily this condition soon gave way to a rapid and somewhat feeble pulse and heart beat. When the clonic period set in the heart again became slow and gradually got back to normal during the comatose period. The conclusions to be drawn from the respiratory changes are not so certain on account of the convulsions.

Asylum Notes.

MURRAY ROYAL ACADEMY, PERTH, SCOTLAND.

By MARGARET A. CLEAVES, M D.

In the sixty-fourth report of this asylum, Dr. Urquhart, the superintendent, very pertinently points out, that while 17 of the 48 admissions were accredited with good health in the statistical tables, they were, upon careful analysis, found variously to be the subjects of arrested development, viscious habits, previous attacks of insanity, acquired disease or accidents, acting powerfully upon the nervous system. Twenty-one were frankly catalogued as suffering from more or less pronounced physical disease, either causative of insanity or accompanying and aggravating the disorder. In every instance of insanity the nutrition, relations, or functions of the brain cells is interfered with by disease, accident, or such a powerful cause as alcoholism.

In all asylums reports it is customary to credit a certain percentage of admissions with good bodily health. In these cases the relation of the insanity to any known physical disease has been shrouded in the most absolute darkness.

The pathological investigations of Dr. Bevan Lewis, second to those of no living man save Meynert, have "brilliantly illumined the facts of clinical experience and have given fresh impetus to the treatment of mental maladies."

Concerning the causes of insanity, Dr. Urquhart reports "that it yearly becomes more manifest that some inherited constitutional tendency to the more obvious forms of mental disease, or a mere nervous instability, is a fundamental necessity in the evolution of these disorders. In one case only did a mental (moral) cause, without ascertainable physical cause, produce insanity. It would almost seem that the cares and troubles of mortal life are impotent to overthrow a well-balanced brain. A certain inherited vice or acquired pathological habit is apparently the prime factor in producing mental disease." "Calamity or other undue excitement merely gives the impetus to an already overburdened nervous system, and so it comes about that a bank failure, or a wave of emotional religion leaves its mark on asylum statistics."

The fulness of knowledge concerning all these things only comes, as is pointed out by Dr. Urquhart, by patient investigation in the consulting-room, in the ward, and in the mortuary.

A MOVE IN THE RIGHT DIRECTION.

The University of Edinburgh, which has something like two thousand medical students, will, in future, provide that all its students shall study mental diseases, an ordinance to that effect having been passed by the Scottish Universities Commission, a few months since.

Speaking upon this subject at the Jubilee Meeting of the Medico-Psychological Association of Great Britain and Ireland, Dr. Clouston said: "It cannot but happen that if we have something like two hundred men a year paying some attention to the subject, we shall have twenty or thirty of them with original minds, taking up the study and doing original work, whether in asylums or wherever they may happen to be. Thus, we shall have medical men in various spheres, who will have studied the subject, and will be able to read intelligently these problems, which hitherto men in their position have not been able to deal with for want of special education. This, I think, will give an enormous fillip to the development of our subject in the future.

FEEDING OF THE ACUTE INSANE.

A normal nutrition is the basis of all healthful function; it naturally follows, that the feeding of the acute insane is a matter of vital importance. Theoretically, this is recognized, but practically, suitable feeding does not always obtain in our hospitals and asylums. Not that quantity is ever lacking, but sometimes quality and suitability to individual needs. The following paragraph from Dr. Campbell Clark's report, 1890 (Glasgow, Gowan, and Lanark Asylum), is a recognition of this fact, which we quote with great pleasure:

"To feed acute and critical cases with the proper kinds and quantities of nourishment, and with due regard to the state of their digestive functions, needs a nicer discrimination than we are, perhaps, aware of; and I am satisfied now, after a careful examination and clinical investigation of asylum dietetics for many years, that the digestive and intestinal troubles of the insane are by no means mythical."

THE ISLE OF MAN AND GENERAL PARALYSIS OF THE INSANE.

The following interesting statement is made by Dr. Richardson in his report, we glean from the *Journal of Mental Science*, Oct., 1891, concerning the above subject: "That rapidly fatal disease, general paralysis of the insane, is, fortunately, very rare indeed among the nations of this island. During the past six years I have seen no instance of it in a patient of Manx parentage. Of the two cases which died of this disease, the one was a private patient from Liverpool, and the other a resident, not Manx. The cases at present under treatment, are, further, not natives."

CANCER IN RELATION TO INSANITY.

From a somewhat extended inquiry into the above subject, Dr. Herbert Snow, surgeon to the Cancer Hospital, London, concludes that:

I. "*Cancerous disease among the insane is rare.*—Among individuals with congenital mental deficiency it seems to be almost wanting.

II. *Cancer is not increasing in frequency among the insane.*—This fact is of no slight importance in connection with the view of cancer, as specially a disease of civilization largely caused by depressive mental emotion; and with the explanation of its greater prevalence in recent years on the ground of the increasing wear and tear which nineteenth century life involves. . . .

III. *Cancer not uncommonly precedes and causes mental derangement without cerebral tumor formation.*—It should rank among the recognized causes of insanity."—*Journal of Mental Science*, Oct., 1891.

THE INFLUENCE OF MUSIC ON MENTAL DISORDERS.

Dr. J. Van Deventer opened the discussion on the above subject, at the last meeting of the Dutch Psychological Society. His views and the result of his observations are reported at some length in the " Journal of Mental Science," for October, 1891.

Referring to the position which music held among the ancients, and more recently to the work of Pinel and Esquirol, he concludes that " music is by no means to be regarded as a harmless form of mental treatment; the factors that come into play are numerous and varied, the use of vocal, instrumental, or concerted music, the instrumentation, the tone, musical color, rhythm, subject, harmony and delivery, the time of life and individuality of the hearer, his social status and mental culture and development, and his morbid leanings and disposition, all have to be studied. In all *acute mental* conditions music is contra-indicated, bodily and mental rest being in these conditions of the first importance.

In the more *chronic forms*, as well as during the period of reversion to mental health, music frequently serves a beneficial purpose and will produce natural sleep.

During such a musical performance the first symptoms of improvement may appear.

In *acute mania* the excitability is increased.

In *chronic mania*, on the other hand, music is frequently of service to accustom the patient to an orderly and regulated form of life, and by so doing bring him back within the pale of social conduct from which his disease has caused him to drift. Again, during the return from mania to mental health, patients will show themselves very sensitive to music, and relapses may occur if such a form of recreation or employment be too readily adopted.

In *moral insanity*, at least the more obvious forms, it seems to produce no effect.

In very *young children* especially those of a neurotic tendency, it should be employed with great caution.

In *neurasthenia*, especially in cases of organic hypersensitiveness, music, by inducing functional irregularities, acts prejudicially, subsequent tinnitus in the shape of musical sounds, auditory pain, unpleasant sensory disturbances, mental anxiety and confusion, convulsive seizures, unconsciousness, etc., may supervene, while in particular instances, the subject of chlorosis or cardiac disease, the after-results may be most serious.

Dr. Van Deventer instances one of his cases of neurasthenia, suffering from heart disease, who, at the sound of distant music, would for some time subsequently be subject to auditory hallucinations.

He also calls attention to the fact, with which everyone accustomed to the care of neurasthenic patients is familiar, of their idiosyncrasy for particular sounds, so that the throbbing noise of a steam-engine or the tinkle of a tramway bell becomes extremely painful to them, though they can frequent concerts with pleasure and without deleterious results. We recall a case where the throbbing of a steam-engine produced vertigo, confusion of ideas, and a cerebral pain. Another, to whom the ticking of a watch, day or night, but especially at night, caused the most intense distress in the head, each swing of the pendulum producing the sensation of exquisitely painful vibrations in the brain substance. This patient, although ten years have passed since the acute attack, has never become tolerant of the ticking of a clock. Yet, in both these cases, when the above and sundry other noises were most painful, music, especially fine operatic music, was a source of great pleasure.

Dr. Van Deventer finds that some of these patients can not endure band music, while to others, string music, and especially the upper notes of the violin, are unbearable. And further, "as an indication of the age, it has been observed that a large number of neurotics are passionate lovers of Wagnerian music ; here the sensuality and pessimistic views of the day find a ready echo in the characteristic elements of the music with its voluptuous expression and power over the passions. At the end of a busy and toilsome day it will act as a stimulant to these subjects, engendering a spurious mental revivication, and it is for the very reason that by its influence, unpleasant sensations are temporarily put aside, only subsequently to return with greater intensity, that we may regard it as a dangerous stimulant."

In the acute stages of *delusional* and *impulsive* insanity, music is generally to be deprecated.

Sometimes sensory delusions are aroused by musical influence, especially in those forms of alcoholic insanity in which hallucinatory disturbances are easily evoked.

As an educational means, music among *idiots* is of great value. In compound psychoses, such as *general paralysis* of the insane, *epileptic* and *hysterical* insanity, etc., one cannot, says Dr. Van Deventer, "lay down any fixed rule for guidance, as the effects are by no means constant, but in hysteria the patient so frequently gives expression to the abnormal feelings aroused in him, that music should in such cases be expressly discountenanced."

Orchestral music, he finds, under good and proper management, fosters a mutual kindliness of disposition, produces a friendly co-operation and an interest in the patient's surroundings, furthers the progress toward a better social bearing, and assists in the work of eradicating bad habits.

"For the rest, we may regard music as a valuable agent in particular affections, to employ the patient, to lead his thoughts into definite channels, to improve his disposition, and to control his will." Care must always be taken. A single simple melody at first, guarding against exaggeration or excess, giving preference to concerted music, avoiding all harmonies which have a moving effect on the feelings, which give expression to existing morbid conditions, which lead the imagination into unhealthy channels, or which, by their nature have a fatiguing effect on the mind.

INFECTIOUS MULTIPLE NEURITIS FOLLOWING FACIAL ERYSIPELAS.

Leu, in the "Charité-Annalen," xv., Jahrgang, reports the case of a patient who came under his observation in the hospital suffering with some slight symptoms of neuritis. The accession of the disease had taken place immediately on convalescence from facial erysipelas, and had appeared to be a mild attack of articular rheumatism. There was only slight paræsthesia of the lower limbs. Following this came a sense of pressure in the main nerve trunks, with disappearance of the patellar and cremasteric reflexes. There was also marked subjective and objective sensory disturbances, with impairment of electrical reaction of the muscles and nerves to both currents, which eventually gave the reaction of degeneration. Atrophic changes took place rapidly. The height of the fever was in no proportion to the pulse acceleration. The breathing was very difficult in consequence of deficient innervation of the muscles of respiration. There was a peculiar desquamation of the skin of the extremities, with excessive hyperidrosis of the entire body and a miliary exanthemata over the breast, abdomen and back. Albumen was present in the urine. The spleen was distinctly enlarged. B. M.

Periscope.

EXCERPTS WILL BE FURNISHED AS FOLLOWS:

From the Hollandish, Swedish, Danish, Norwegian, German, Portuguese, Roumanian, Spanish, and Italian:
F. H. PRITCHARD, M.D., Norwalk, O.

From the Swedish, Danish, Norwegian and Finnish:
FREDERICK PETERSON, M.D., New York.

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WILLIAM M. LESZYNSKY, M.D., New York.
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The Editor will not accept as ORIGINAL ARTICLES and CLINICAL CASES those that have appeared elsewhere.

Authors are requested to make none but typographical corrections on the proof sent to them. The manuscript must represent the final form in which the article is to be printed.

PATHOLOGICAL.

THE INFLUENCE OF PREGNANCY ON EPILEPSY.

An exhaustive article by Dr. Guder on this subject is carried through two numbers of the Medicinish-chirurgisches Central-bl. The author has made extended research into the data bearing on this question. This, taken conjointly with his own personal experience of such cases, enables him to draw the following conclusions: that epileptic attacks were, as a rule, absent during pregnancy, but that they were always sure to make their appearance during and after the puerpural period; that there was the fact of the off-spring of such women being predisposed to epileptic or eclamptic attacks, to be taken into consideration. For his part the author was disposed to persuade, as far as possible, epileptics from marriage and that if pregnancy did occur he was in favor of artificial abortion. He thought that an effective means of stamping out, or at any rate of preventing children being born with a predisposition to epilepsy, would be the sterilization of epileptics by castration or ligation of the tubes. As to the predisposition of epileptics to eclampsia there was still a great difference of opinion among observers in this direction. Nerlinger thought that for one thing a differential diagnosis of an attack, occurring during the puerperal state in an epileptic, was difficult to make, as to whether it was an epileptic or eclamptic seizure, and that as to the question of predisposition of epileptics to eclampsia the matter was by no means settled. And also that in young children predisposed by neurotic inheritance to epilepsy it would be a difficult matter to say whether the first attack was epilepsy or eclampsia. Fere thought that there was a close association, in predisposed neurotics, between epilepsy and eclampsia. B. M.

ALTERATION IN THE SYMPATHETIC AND CEREBRO-SPINAL SYSTEM IN ADDISON'S DISEASE.

The complexity of symptoms in this disease is still not much better understood than when Addison first described it in 1855. According to Fleiner the opinion in Germany is that the abdominal sympatheticus is at fault, generally of the branch supplying the suprarenal capsule. Recent writers have also found disease in the spinal nerves going to these parts. Tizzoni has found considerable alteration in the central nervous system, such as pigmentary deposits descending numerous nerve fibres, with inflammations and hæmorrhages. This author had a case of accidental death to occur in a patient with distinct indications of Addison's disease. During life the only evidence of ill health was a fungous inflammation of the testicle, which was operated on, death following in twenty-four hours. Autopsy revealed an extremely enlarged semilunar ganglion, with chronic inflammation and thickening of the supra renal capsule, which proved to be tuberculous. In another case autopsy showed a part of the left supra renal capsule to be occupied by a metastatic angiosarcoma. The right capsule was healthy. The semilunar ganglion was not enlarged. The most of the nerve bundles of the splachnic were in a state of sarcomatous degeneration. Above this point the whole abdominal sympathetic system, as well as the accompanying blood vessels, were in a condition of inflammation with degeneration of the medullated nerve fibres and of the ganglion cells. In the first case the entire abdominal sympatheticus was involved in an atrophic process. That both cases were consequent metastases from ganglionic tumors in the neck there could be no doubt, as such a condition was known to have existed. In the intervertebral spinal ganglia there was much inflammation, their capsule was thickened and their inner cellular layer indicated hæmorrhages, the ganglion cells were infiltrated with pigment and were in a marked state of degeneration as well as the accompanying sympathetic nerves. The posterior roots as well as the intercostal nerves were in a condition of degeneration. The motor roots and the substance of the spinal cord proper, were in a normal condition. The peripheral nerves, the ischiatic and vagus, were found degenerated. This condition existed in the new as well as the old case, and could not be laid to cachexia. In the mixed nerves of the skin there was a high degree of degeneration in the sensory fibres. The muscular fibre cells of the heart were in a state of pigmentary atrophy. The principal change in the gastro-intestinal tract was the pigmentary alteration. This might be due to the nearness of the trophic disturbance in the intervertebral ganglia. The disease of the supra-renal capsule while not an inflammation of the sympatheticus might bring about that condition and produce the complex symptoms of Addison's disease. The question was, could the disease of the sympatheticus produce the change in the supra-renal capsule as well as the accompanying symptom. (Medicin. Anzeiger, July 11th.)

B. M.

SENSORY CHANGES AND CONDITIONS OF THE OCULAR APPARATUS FOUND IN EPILEPSY IMBECILITY AND GENERAL PARALYSIS OF THE INSANE.

Chas. A. Oliver, M.D. (Jour. of the American Med. Asso., Sept. 26, '91), says: "In idiopathic epilepsy in the male adult, the chronic retinitis and perivasculitis associated with partial red gray degeneration of the optic nerve, causing decrease of physiological working power, are probably explained in part by the presumption that every convulsive discharge leaves an additional pathological condition, by which such intra-ocular appearances are established as the results of a similar process which has *pari passu* been taking place within the intra-cranial substance, especially the cerebral cortex. In the lower grades of imbecility in the male adult resulting from malformation or disease of a minor degree than that producing idiocy, that has supervened in infancy or occurred before birth, the findings of abnormally healthy eye-grounds, almost identical with those seen during infantile existence, indicate not only an almost absolute perfection of the visible constituents of the observed tissues, which *per se* should be capable of proper activity, but show by reason of mental incapacity, which has supervened in such subjects before the eyes have been brought into continued action as instruments of delicate use; that the conditions known as red gray optic disc; irregular physiological excavation; non-visibility of superior and inferior parts of scleral ring ; absorbing conuses ; increased thickness of retinal fibres; opacities of lymph sheaths; disturbed states of the choroid and errors in astigmatism, with changes in indices of refraction must be considered expressive of low inflammatory action, with stretching and distortion from increased intra and extra-ocular pressure. In general paralysis of the insane in the male, the appearance of the choroid, optic nerve and retina, are not only indicative of pronounced local disturbance and irritation, which represent the results of wear in a delicate and weakened organ, but are expressive of a degenerate condition of the sensory portion of the ocular apparatus, with impairment of sensory nerve action, manifested as one of the many peripheral evidences of approaching degeneration of nerve elements, most probably connected with related cortex disintegration and tissue death.

A. F.

THE DIAGNOSIS OF INTRACRANIAL HÆMORRHAGE AND ACUTE SOFTENING.

Dr. C. L. Dana (British Med. Jour., Sept. 12, '91) analyzes the symptoms in 74 cases, 50 of which were due to hæmorrhage, the remainder being equally divided between embolism and thrombosis. Premising that his paper is based on fatal cases, he states that short, severe attacks of unconsciousness with hemiplegia and also preliminary mild seizures, indicate obstruction. Consciousness is effected less in cortical and meningeal than in central hæmorrhages, unless the former are extensive; it is most severely affected in ventricular hæmorrhages, and in the latter consciousness is speedily lost ; if convulsions supervene the clot has broken through to the brain surface. Loss of consciousness shortly after the onset indicates probably embolism. Convulsions are due to hæmorrhage or cortical softening, and never occur at the onset. There is early rigidity in about half the cases of ventricular hæmorrhage, more marked on the paralyzed side, less often in other forms of hæmorrhage, still less in thrombosis, and most rarely in embolism. In hæmorrhage the pupils are contracted and irregular, especially with a cortical or meningeal lesion; the pupil on the side of the lesion may be dilated. Alternate congugate deviation indicates a surface lesion. Some loss of cutaneous sensation occurred in a fifth of the hæmorrhagic cases, and in a much larger proportion in softening. The peculiarities of temperature in softening, as distinguished from those in hæmorrhage, are the rarity of primary subnormal temperature and its presence, if it exists, only on the non-paralyzed side; also the slighter tendency to inequality of temperature on the two sides, and its slower rise, if a rise occurs. A. F.

FACIAL PARALYSIS.

Dr. Lusanna, in the "Rivista Veneta" for October, 1890, makes quite an extended study of the course and disease of the seventh pair of cranial nerves. He divides it anatomically into five portions:

1. Cerebral.
2. Bulbar.
3. Intracranial; the trunk of the nerve from its root to its entrance into the internal auditory meatus.
4. Inter-cranial; its traverse through the cranium.
5. Extra-cranial, from the style mastoid foramen to its different terminal filaments.

These divisions are of much importance, not only from a diagnostic point of view, but also in rendering a prognosis. Lesions occurring in the second portion are often fatal; those in the first, second and fourth are serious, while those in the fifth are light.

The differential symptoms indicating the seat of the disease in its course, are:

1st Portion.—Cerebral, conservation of reflex phenomena.

2d Portion.—Bulbar, paralysis of the extremities.

3d Portion.—Intra-cranial, injury to the neighboring nerves.

4th Portion.—Inter-cranial, gustation of the anterior part of the tongue abolished. Hyperarsthesia of audition.

5th Portion.—Extra-cranial, paralysis of the facial muscles not of the palate.—(Gazzetta Delle Cliniche. Marzo, 1891.) W. C. K.

PERIPHERAL PARALYSIS IN HYSTERICAL SUBJECTS.

MM. Brissaud and Lamy (British 'Med. Jour., Sept. 10, '91) state that hysteria may produce paralysis not localized in the distribution of any particular nerve. These paralyses effect motion and sensation and corrrespond to those in amputation at various levels. Hysterical predisposition is necessary, but sòme exciting cause must also be present either auto-suggestion or some special irritability in the distribution of a nerve. Case 1.—A young man had a small submastoïd abscess opened on the left side. Though the brachial plexus was uninjured, there followed pains and contracture in the left arm, atrophy, trophic changes in skin and nails, hyperæsthesia on left side of body, limitation of visual field and abolished pharyngeal reflex. The case was not considered one of neuritis nor ordinary hysterical paralysis, but a paralysis in a hysterical subject because hysterical, and also as there was a special irritation in the neighborhood. Case 2 occurred in a male, who, after an auxilliary wound causing arterio-venous aneurism, suffered from paralysis a loss of sensation in the arm. Removal of the aneurism produced considerable improvement, but suddenly after an effort paralysis reappeared. There were also hysterical manifestations in this patient. A. F.

TETANUS.

Lev. Frankl-Hochwart, "Centralblatt für klinische Medicin," No. 46, gives us some interesting data in regard to this disease. He finds that tetanus is most prevalent in March and rare in September. Out of 360 cases, 318 were men and only 42 women. Of the men 141 were shoemakers, 72 tailors, and 22 carpenters. The tetanus attacks, in most instances, persons of previous good health, but who were suffering at the time from some acute infectious disease, or drug intoxication, or uræmia. The diseases it was found most frequently associated with were typhoid fever, measles, scarlet fever, cholera, articular rheumatism, angina and influenza. The drugs were ergotin, alcohol and chloroform. It was not uncommon to find it occur in women during gestation, the puerperal stage, or even during nursing. In some of the cases the attacks came on after extirpation of glands in strumous patients. The author was convinced, however, from observation upon animals where the lymphatic glands had been removed, that the phenomena described by Trousseau were produced by nerve irritation and not by vessel compression, as he had found the electrical excitability very much increased in these cases. The prognosis of idiopathic tetanus in a young healthy individual was good, providing there was no relapse. That arising from some toxic influence and from infectious disease was also favorable. Tetanus occurring during pregnancy, the puerperal period or nursing was usually fatal to both mother and child. The therapie was to be directed to any cause which might exist; if idiopathic, medicate promptly with morphine and chloral hydrate.

B. M.

CONGENITAL DISEASE OF THE CENTRAL NERVOUS SYSTEM.

In the "Centralblatt für klinische Medicin," is found a monograph on this subject by G. Anton. The author had made extended study in this class of cases, and had obtained autopsy on a child two years of age, which had presented the following symptoms: Abnormality of the skull, limitation of motion, atrophy, increased muscular reaction, and general increase of reflex irritability—conditions which seemed to justify the diagnosis of congenital encephalitis with lesion of the pyramidal tract. There was also found considerable atrophy of the cerebrum, the temporal lobes and the cerebellum being apparently normal in volume. Further examination showed the pyramidal tracts and lateral columns of the cord to be almost replaced by a gliomatous substance. The cura cerebri were atrophied, the only exception being that bundle of fibers going to the temporal lobes. The posterior columns were intact. A transverse section through the cord at a point where the lateral columns were the most deficient showed the decussating fibers of the posterior columns to have undergone quite marked fibrous degeneration. The cells of the anterior horns were not altered. The gray substance of the cerebellum, the pons, corpora quadrigemina and the basal temporal portion of the cerebrum were in a normal condition, but that of the cerebral cortex and the remaining basal ganglia were dotted with open spaces or gaps. The blood supply of the crus, especially that of the lateral temporal portion, was much diminished. The author was not sure but that the incomplete development of the cerebrum could be laid to the disturbance in blood-supply to these parts, although the history of the case pointed to some extrinsic noxious element as a probable cause. B. M.

THE INFLUENCE OF INFLUENZA ON THE NERVOUS SYSTEM.

That to the late epidemic of influenza can be traced a number of neuroses there seems to be no doubt, if we are to accept the statements of a number of observers in this direction. Borchardt's thirteen cases, previously reported, were represented in the following varied forms of nervous diseases:

Three supra-orbital neuralgia.
One ischiatic neuralgia.
One tonic spasm of the trapezius.
One tonic spasm of the sterno-cleido-mastoid.
Two cases of hypochondria.
Two paroniria with hallucinations.
One case of hysteria.
Two melancholia.

The author had these cases still under observation, and the nervous symptoms were as yet persistent. B. M.

OPERATIVE TREATMENT OF SPONDYLITIC PARALYSIS.

Prof. Kraske, in the "Arch. f. klin. Chirurgie," states that after considerable experience with the varieties of spondylitis, he is satisfied that opening the spinal canal for the removal of epidural exudation causing mechanical pressure is a rational operation. The paralysis is more frequently due to compression from the exudation than from dislocation of the vertebræ. It was only in two per cent. of the cases that spondylitic paralysis was caused by the kyphosis. To the pachymeningeal exudation and to tuberculous processes in the epidural space causing pressure could the remaining cases be ascribed. The author described the case of a woman, fifty-seven years of age, who was suffering with multiple bone tuberculosis, with both sensory and motor paralysis of the lower extremities. On opening the spinal canal, sequestrum were found with abscesses in the epidural space. These were thoroughly cleared out, with the result after the operation of motion in both legs. In consequence of the extensive caries the cure was not permanent, the paralysis returning after a time. In two other cases of paralysis the spinal canal was found filled with masses of granular matter, which were removed with a sharp spoon, the bone cavity also being thoroughly scraped out. In these cases, at the end of two months, all symptoms of the paralysis had disappeared. As to the permanency of cure, of course much could not be promised, but as to giving a new lease of life it certainly did that much. The cases in which the results were best were those of caries of the arches, although spondylitis of the bodies did not preclude the possibility of the operation giving a certain amount of success. B. M.

CLINICAL.

PORENCEPHALUS.

At a meeting of the Medical Society of Zurich, held November 15, 1890, V. Monakow reported the history of a case of porencephalus. (Correspondenz Blatt für Schweizer Ærzte 1891, No. 5.) The patient was a child 12 years of age. Immediately after birth, which was terminated by forceps, left hemiparesis was noted, and the skull was flattened obliquely from the left anterior to the right posterior portion. The child did not walk until the fourth year. The left half of the body, including the face, was paretic and retarded in its development. There was no distinct contracture, only a moderate degree of talipes equinus. The mental development was slow. Neither defect in character nor speech disturbance. No convulsions during infancy. From the year 1888, epileptic fits recurred every two to four weeks, usually several attacks in succession. They were preceded by a motor aura, the left arm becoming slightly elevated. The attack then ran its course in unconsciousness and general convulsions, which always began and were more marked upon the left side. The spasms occurred without loss of consciousness. Death took place October, 1890, from acute cerebral symptoms unconnected with an epileptic attack. The autopsy revealed a vesicle filled with a clear serous fluid and covered by the arachnoid in place of the right central convolutions, the operculum and partly of the first temporal convolution. The floor of the cavity was funnel-shaped, and communicated with the lateral ventricle by a small fissure. The paracentral lobule was intact. The floor of the defective parietal lobe was composed of small portions of convolutions, radiating toward the base, particularly in the region of the supramarginal gyrus and the central convolutions. The insula was not involved. The right sylvian fissure extended partly into the cavity. Frontal lobe normal. Occipital and parietal lobes showed secondary atrophy (degeneration of the optic radiations and disappearance of the medullary substance in the occipital lobe. In the left cerebellar hemisphere there was considerable loss of substance. In place of the walls of the hemisphere a large vesicle was found, communicating with the fourth ventricle. All of the cerebral arteries normal. Secondary degenerations: R. optic thalamus markedly atrophied; R. corpus geniculat ext.; anterior corp. quadrigem. Right optic tract and left optic nerve decidedly atrophied. R. courpus geniculat int., also involved. R. peduncle very small, the right pyramid completely atrophied to a thin cord, the left being normal. The right olivary body and the left cerebellar peduncles were considerably wasted. As to the etiology, the author mentions the defective development of the mother (narrow pelvis) and the difficult forceps delivery, in addition to the hereditary influence from the paternal side. The condition of the cranium is also indicative of forcible compression having occurred in utero. The defective development of the cerebellum, which is extremely rare in porencephalus, was undoubtedly produced by the same mechanical means. The changes in the thalamencephalon and the mesocephalon, as well as those in the medulla, are to be looked on as secondary, as similar changes can be artificially produced. The slight involvement of the left half of the body is remarkable, as the motor zone was, so to speak, completely excavated, and only an insignificant portion of the right pyramid remained. It is worthy of note that the compensatory development of the left pyramid, doubtless gradually gained a decided influence over the right anterior horn. In conclusion, he calls attention to the slight mental disturbances manifested, despite the extensive changes in the right cerebrum and the left cerebellum, and expresses the opinion that in all probability a compensatory development of nerval elements has taken place, or, in other words, an increased function of the left hemisphere. W. M. L.

PAINS OF CENTRAL ORIGIN.

Dr. L. Edinger (British Med. Jour., Sept. 12, '91) cites the case of a woman, aged 48, who had a slight attack of apoplexy three years after endocarditis. The initial symptoms were disturbances of sensation in the right limbs and transcient defect of consciousness. Then followed paralysis of these limbs, hyperæsthesia, and intense pain in the right half of the body, and eight months later athetosis and contraction of the arms came on. Temporal hemianopsia of the right eye was superadded and the pains led to suicide two years after the fit. A focus of embolic softening was found in the dorsal portion of the external nucleus of the left optic thalmus, extending back into the pulvinar, and involving the internal capsule at the posterior region of Charcot's sensory crossway. Secondary degeneration of fibres in the mesial portion of inner third of corresponding crusta was seen. Dr. Edinger points out that the absence of degeneration in the pyramidal tracts and of exaggerated knee-jerks in this case seem to indicate that disease of the thalamus may cause late rigidity. Hemianopsia from capsular disease, without hemianæsthesia was considered due to the small extent of the primary lesion. The pains and hyperæsthesia were presumably the consequence of direct contact of sensory fibres with the diseased patch. A. F.

PERIODIC CONTRACTURES.

G. Lauch, Virchow's Archiv., contributes an article on the pathology of the nervous system, an abstract of which article appears in the Centralblatt f. Klin. Med., No. 35. The patient, a man aged forty-eight years, of good habits, was frequently seized with attacks of rigidity of the left leg and the left arm, which became fixed in a state of right-angled flexion, consciousness was retained, the whole lasting from one quarter to twenty-four hours. During these seizures there was trismus and speech was impossible. In the interval, motion in the left leg and hip joint was limited, as well as in the left shoulder joint where voluntary movement was weak. There also existed a contracture of the left sterno-cleido-mastoid muscle. Articulation was unintelligible, the cheek was puffed out and the mouth drawn up in a pucker. Sensation in the left side was distinctly lowered. During a subsequent seizure there was loss of consciousness, straight and rigid contractures in both legs, right-angled flexion, contractures in the arms with a rigid condition of the pelvic muscles, trismus and twisting of the head to the left side. These attacks continued to recur, each time involving some new part of the musculatur, finally before death there was double facial paralysis, spasm of the phayrnx and disturbance of the hitherto intact psychical condition. Microscopical examinations at the autopsy gave negative results, the microscopic study was still to be done and the author thought that it would be as well not to theorize as to the possible pathological conditions that might be found until the work was finished, he however, ventured to think that perhaps the fault would be found in the circulatory system of the brain, as a few abnormal vessels were visible. B. M.

THERAPEUTICAL.

EXALGINE AT THE LARIBOISIERE HOSPITAL.

In a pamphlet lately published in Paris by the Society for Scientific Studies, on a "Study of Exalgine from Observations made at the Lariboisière Hospital," the author, Dr. Emile Désiré, gives some very interesting cases. As the patients selected were in Dr. Gouguenheim's clinic it may be taken for granted that they were very carefully watched. In every case the exalgine was given at 2 and repeated at 4 o'clock in the afternoon; in every case, also, the initial dose was 0.25 grammes (4 grains), and this dose was the rule, but in some of the cases it was progressively increased to as much as, or even more than, 12 grains (0.75 grammes).

The pamphlet contains details of 32 cases of in-patients suffering from nearly every variety of pain; of these, 30 were more ameliorated or permanently cured; of the remaining two cases, in one the drug was not pushed, in the other the patient refused further treatment. In four cases of the bone pains of syphilis, all were cured; some of these were very old and had resisted all other medication. All the cases were adults, and all apyretic, in fact, a high temperature was considered a contra-indication.

Vertigo was complained of in a few cases, but no change of dose was made for that cause; in one case, the dose was increased with disappearance of the vertigo; these cases were cured. In one case of this kind (laryngeal epithelioma) the patient complained of visual trouble after two doses of the drug. After a third dose of four grains his pain was very much diminished. He was an out-patient, extremely weak, and unable to come to the hospital again.

The out-patient department of Dr. Gouguenheim's clinic is very rich in laryngeal patients, and the exalgine was administered in a great number of these—some hundreds—in which the patients complained of dysphagia consective to tuberculosis. In some of these the patients were unable to swallow even their saliva without very great pain; great amelioration for long intervals was secured by exalgine.

The author does not mention the use of exalgine in traumatic pain, but other observers have found it of great value in this direction.

SOME OBSERVATIONS ON THE USE OF PIPEROZINE.

Dr. Heuboch, "International Centralblatt für die Phys. v. Path. du Harn u Sexual."

Piperozine at present seems to have much attention given to it in Germany and the investigations of Sprogue, Vogt, Burdet and others, besides the author here quoted, seem without doubt to place it among the therapeutical advances of the day. The evidence of the practical researches of all seem to point to the great practical usefulness of the drug in gouty conditions and its capability of dissolving uric-acid concretions. The therapeutic trials of the drug hypodermically in two cases of lumbago were successful. Dose, 0.5 gm. doses four times daily—a total of 2.0 gm. in the twenty-four hours. Voluminously diluted solutions preferred. A full translation of Dr. Heuboch's article appears in "Notes on New Remedies."

SULPHATE OF DUBOISIN IN THE TREATMENT OF INSANITY.

In the "Neurologisches Centralblatt," October 1, 1891, Dr. Max Lewald publishes the results of the use of duboisin in the treatment of twenty-two cases of insanity. Twenty-one of these were of long standing, the patients being women. Only six were the subjects of hallucinations, four of agitated dementia and periodical mania, three of paranoia and mental disturbance, with epilepsy, and one of senile dementia. The drug was obtained from Merck's laboratory. It is readily soluble in water, and was administered subcutaneously in a solution of 0.04 to 20 aq. He had never found it necessary to give more than 0.002 ($\frac{1}{32}$ of a grain) as this dose seemed to prove the most effectual. The forearm was the part selected for the injections, which were always given with the usual antiseptic precautions. Neither abscess nor infiltration occurred. There was no complaint of pain following the injection. Mydriasis was the earliest symptom which occurred. In from ten to thirty minutes (rarely later) there were numerous symptoms showing that the influence of the drug had extended to the brain. In three-fourths of the cases sleep was produced varying from two to seven hours. In exceptional cases the sleep lasted longer. In 72 per cent. a full effect took place. The patients became perfectly quiet, and after twenty or thirty minutes slept so soundly that often they were not disturbed by the taking of the pulse and temperature. In 24 per cent a persistent state of tranquility ensued without sleep. In 4 per cent. the remedy seemed to have no effect whatsoever. His results correspond with those of Ostermayer and Preninger in showing that duboisin has a more pronounced influence in women than in men. If the same dose be given for several days, a diminution in its effect and tolerance is established, but if the injection be discontinued for a few days, and then resumed, the former prompt action is again noticeable. W. M. L.

Society Reports.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of December 1, 1891.

The President, Dr. L. C. GRAY, in the chair.

RESECTION OF POSTERIOR BRANCHES OF UPPER THREE CERVICAL NERVES FOR SPASMODIC TORTICOLLIS, WITH REPORT OF A CASE.

DR. CHARLES A. POWERS read a paper with this title. In February of the present year the patient, a man thirty-seven years of age, was sent to the speaker for an opinion regarding a spasmodic affection of the neck from which he was suffering. There was no history of syphilis or other constitutional disease. He had been from boyhood exceedingly nervous and restless, starting violently when suddenly surprised, trembling at the slightest injury or fear of danger. His father had always manifested the same nervous conditions in a marked degree. The patient had rather a senile look, stooping and throwing the head well forward. When left to itself the head was spasmodically rotated to the right to its fullest extent. The patient could carry it back by pressing the chin over with the hand, but when the restraining force was removed it was instantly jerked back to its rotated condition. These spasms were constant during the day, and much worse when the patient was fatigued, irritated, surprised, or among strangers. The right hand was constantly upon the chin, and the patient was unable to use it in work or even at table. The right shoulder was not elevated, there was no spasm of the muscles of the left side, and the right trapesius, sterno-mastoid and scalenus anticus seemed free from implication. The patient's neck was large, thick and short; it seemed somewhat fuller on the right side, posteriorly, than on the left. The spasmodic movement seemed to be a rotation of the occiput upon the atlas; when it took place an increased fullness could be felt in the region just below the occiput and covered by the trapesius, although no contraction could be felt in that muscle. After very careful examination the affection was considered to be confined to the posterior rotators, and division or resection of the nerves supplying them was recommended. The speaker, after familiarizing himself with the anatomy of the parts, by dissection of the cadaver, proceeded upon the patient as follows: the occipital region was shaved and the parts prepared in the usual way. The anæsthetic was given and the patient placed flatly upon his abdomen, the head projecting over the end of the table, and so held that the external occipital protuberance was in a straight line with the vertebral spinous processes. A three-inch transverse incision was made at the back of the neck, beginning at the median-line one and one-quarter inches below the external occipital protuberance and running forward. This was sufficiently enlarged until it measured four and a quarter inches in length. After some difficulty the occipitalis major nerve was found at the upper part of the complexus outside of the intra-muscular aponeurosis of this muscle. The complexus was divided and the nerve followed back to the posterior branch of the second cervical. The inferior oblique muscle was then found, passing from the tip of the transverse process of the atlas to the spinous process of the axis. The nerve was followed back to its exit from the spinal canal. Following down beneath the complexus the external branch of the posterior division of the third cervical nerve was found. This was traced back to the bifurcation of the main trunk. One had at command then the nerve supply to the inferior oblique, the rectus capitis, posticus major and the splenius, the three posterior rotators, the first being supplied by the first and second cervical, the rectus by the suboccipital from the first cervical and the splenius by the second and third cervical. Each nerve was followed well back to the spine, and from one-half to three-quarters of an inch excised from each of the three. Buried muscular sutures were inserted, a drainage tube laid to the bottom of the wound and the skin sewn up. A large antiseptic dressing was applied and the head fixed in moderate extension by plaster. On coming out of the anæsthetic the patient had no spasm of the neck, the head was in the median line, and remained there until the final removal of the dressings. The wound healed *per primam* throughout; the tube was removed on the fifth day, and all dressings were taken off at the end of ten days. At that time there were a few slight spasms, but they did not persist. Directions were given regarding massage and the like, but these were disregarded, and the head gradually assumed a position of contraction, with the face drawn to the right. In spite of the patient's present contracted wry-neck he expressed himself as feeling that his condition was vastly better than it was before the operation.

Appropriate after-treatment, by confinement of the head, massage, and so forth, should receive careful attention. The speaker could but think that if such measures had been conscientiously carried out in the present case deformity would have been much less.

DR. R. W. AMIDON thought Dr. Powers had been too modest in that he had not called attention to the marked improvement in the patient's right arm. Before the operation this had been practically powerless, while now its functions were restored. The position of the head was now similar to that before the operation, but the spasm was now tonic instead of clonic, and therefore much more endurable. There was now no elevation of the chin, which was conclusive proof that none of the muscles originating or inserted in the occipital bone were now implicated. The elevation of the right shoulder was now much more marked, and there was no doubt that the levator anguli scapulæ entered largely into the production of the deformity. The speaker then went over the action and nerve-supply of the muscles of the shoulder with the view of demonstrating that possibly the present condition might be brought about by this group, the nerves to which had not been cut.

DR. C. L. DANA thought that the muscles of the right side which were cut had possibly entered into the production of the spasm, but that the nerve-force was now distributed through fewer channels, and perhaps this was the reason that the spasm was now tonic. The question was at any rate of extreme interest, because heretofore there had been much scepticism as to the value of operation for wry-neck. He thought the experience of American observers was that operation on the spinal accessory had been uniformly fruitless, but the relief obtained where the upper cervical nerves were involved had given a more favorable showing. With better technique perhaps more favorable results would come, in the case of the spinal accessory. He did not doubt but that the condition under consideration was the result of a central nervous lesion. Why surgical treatment should cure he did not know unless it was the result of the operation *per se*.

Dr. M. A. Starr had seen these cases treated by division of the spinal accessory. No improvement followed. He had therefore hesitated to recommend such procedure. He thought it had yet to be demonstrated that the condition was one of cerebral origin, as there was nothing analogous to wry-neck in the form of cerebral spasm of any other muscle. A patient had come to him last February with an extremely pronounced case of wry-neck. This patient had noticed that pressure on the right side of the occiput high up would relieve the spasm. An apparatus was accordingly constructed which, being constantly worn, enabled him at the onset of the spasm to bring the necessary pressure to the required spot by means of a system of levers worked by his arm. The speaker had that day seen the patient, and had found him apparently perfectly cured and able to leave off the apparatus. It was difficult to determine in these cases what muscles or set of muscles were implicated. The spasm was probably a complex act by a large number of muscles and usually reflex in character, induced by sensory irritation somewhere.

Dr. W. M. Leszynsky thought that there was a lack of such pathological knowledge of the disease as would indicate that there existed a central lesion. It was remarkable that so few microscopical examinations had been so far made of nerves which had been resected. In the present case they had not been offered any explanation as to the cause of the arm symptom, and whether it was supposed to have borne any relation to the spasm in the neck. He had been interested in a few cases of spasmodic wry-neck, and felt confident that the hypodermic injection of atropine had helped them. He had reported a case in which the spinal accessory was implicated, and he had felt that the benefit done was the result of the atropine. He thought that this measure should be energetically tried as part of a treatment by drugs before surgery was resorted to.

Dr. G. M. Hammond said that the general idea was that operations of this kind were not successful. The result in the present case seemed to relate more to the comfort of the patient than to benefit, from a pathological stand-point. It might be easier for the patient to have a tonic instead of a clonic spasm, but the condition of wry-neck remained.

DR. J. M. MORTON cited the history of a patient who had come to him with a well-marked case of spasmodic wryneck of long standing. Every effort had been made therapeutically. He had tried suspension. The *séances* had numbered about five, each lasting about five or six minutes, the patient's toes being just free of, or barely touching, the floor. Improvement had been prompt, and had continued to a cure which had been maintained up to the last report.

THE PRESIDENT had never seen any good results from operative work in these cases. While out of a large number operated upon for him, by different surgeons, temporary improvement had taken place in some, relapse had ultimately occurred. He had obtained more satisfactory results by deep injections of atropine than from any other form of treatment, though he had found the internal administration of belladonna effective. As to the permanency of the atropine benefit he could not speak, the patient having passed from observation. Temporary results were worthless for deduction, and relapses were probable at any time.

DR. POWERS thought that the indications for operation must come from the physicians, surgeons being hardly justified in interfering until every other method of treatment had been tried. Promise of amelioration must be guardedly given. If the technique were perfected so as to cover the nerve-supply to the muscles involved he did not see why the spasm could not be stopped.

Alleged Cerebral Tumor.—DR. LESZYNSKY showed a patient whom he had presented to the society three years ago ; at that time the diagnosis was made of cerebral tumor. The symptoms had then been frontal headache, vomiting, and double-optic neuritis. Now this man was in perfect health, and since treatment had never lost a day's work from illness. There was atrophy in both optic nerves. Vision was in one eye $\frac{20}{30}$—in the other $\frac{20}{40}$. There was no disturbance in the color field. The treatment during the acute stage had been by large doses of iodide of potassium, with leeches and cathartics when the inflammation was excessive. The speaker had been able to find only one where autopsy had revealed localized basilar meningitis in the region of the optic chiasm.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Stated Meeting October 26, 1891.

The President, Dr. H. C. WOOD, in the chair.

DR. H. A. TOMLINSON read a paper, entitled

A STUDY OF THE INDICATIONS FOR, AND APPLICATION OF, PHYSICAL CULTURE IN THE TREATMENT OF INSANITY AND ALLIED DISEASES. (See page 1.)

"RAILWAY BACK." (See page 18.)

DR. F. X. DERCUM read a paper on the above subject, and exhibited a patient.

DR. JAMES HENDRIE LLOYD presented a paper on

A CASE OF MENINGEAL TUMORS OF THE PREFRONTAL REGION, WITH LATE PULMONARY TUBERCULOSIS, AND A HISTORY OF SYPHILIS. (See page 14.)

HEMORRHAGIC TUMOR OF THE PITUITARY BODY AND INFUNDIBULUM, IN A CASE OF PERNICIOUS ANÆMIA. (See page 9.)

By J. M. ANDERS, M.D., AND H. W. CATTELL, M.D.

[Reported from notes by Dr. F. B. Reynolds, Resident Physician, Philadelphia Hospital.]

DR. CHARLES K. MILLS.—I had the good fortune to be present at the autopsy in this case of Drs. Anders and Cattell, which is interesting from various points of view; but I will leave to others the discussion of it with reference to the subject of pernicious anæmia, and will direct my attention to the lesion of the pituitary gland, and to the question of the localizing symptoms which are afforded by diseases involving this gland. Many parts of the brain have through physiology and clinico-pathology afforded us exact localizing phenomena; some parts cannot be reached by the physiologist, and therefore we are compelled to depend upon the results afforded by injury or disease. The pituitary gland is among these. It is probable, in fact almost certain, as will be referred to later, that the pituitary body is not a real division of the brain, but a gland comparable to the thyroid, thymus, etc.; but gland or not it has its functions, and moreover its location is such that many lesions attacking it would involve vessels, nerves, and parts of the brain in such a way as to give definite phenomena. In other words, its diseases will afford a symptom-picture, which will be largely filled in with phenomena dependent upon involvement of surrounding parts.

Although the history prepared by Dr. Reynolds is well told, it is not easy to determine just which symptoms should be referred to the pituitary lesion, which seems to be hemorrhagic in nature. It appears most likely that we should date these symptoms to the autumn of 1890, when the patient complained for a week of pains in his head, which when he stooped were so bad that he felt as if his head would burst. It is also said that about this time everything turned of a red color and whirled around, and that he became unsteady and lost consciouness for a short time. From this time on he had spells of vertigo at irregular intervals, also attacks of nose-bleeding, and increase of headache. In October, 1891, he had attacks of facial neuralgia and of anorexia, with vomiting; on October 7th he became delirious and stuporous, and had internal strabismus, with dilated immovable pupils. During the day before his death he had several convulsions. These few symptoms are all that it seem likely can be referred to the intra-cranial lesion, and even the convulsions may have been due to uræmia, as Dr. Reynolds suggests.

One of the best articles on the pituitary body was written by an American, an associate member of this Society, Dr. Middleton Michel, of Charleston, South Carolina (Charleston Medical Journal and Review, vol. xv., No. 2, March, 1860). This is an essay on the pathology of the pituitary body, presented to the South Carolina Medical Association, and it includes the record of a rare and interesting case. As I do not think it is well known I will take the liberty of calling attention, at some length, to it in concluding my remarks. The patient was a negro, thirty-five years old, a carpenter, and a man of regular habits. He first complained about the head and cloudiness of vision, in September, 1851. He was soon the victim of intermittent headaches, and the imperfection of sight progressed rapidly until he became almost blind. Occasionally he had intense pain in the frontal region, accompanied with a sense of fulness about the orbits. After some months the eyes increased in tension and apparently in size. His appearance and gait became those of an amaurotic individual—the eyes largely opened, the pupils almost immovable and dilated. He complained of throbbing and augmentation of pain upon inclination downward of the head as in stooping, and lying down increased his sufferings. Ptosis appeared and progressed. The eyeballs preserved their parallelism, became sensitive to the touch, and œdema of the subconjunctival tissues increased. He developed fever, insomania and delirium which lasted several days and left him comparatively easy. Chemosis and protrusion of the eyeballs increased; the corneæ were completely covered, and fungus-looking incrustations and hideous exophthalmia resulted. A swelling appeared in the right temporal region; and deafness in the right side, strange sounds in the right ear, obstruction of the nostrils, marked inordination of gait, a perversion of the sense of taste, which induced a somewhat imperative demand for sweets, extreme apathy, some forgetfulness, and hopeless despondency, with otherwise a preservation of his intellectual faculties, completed his train of well-observed symptoms. His pulse was usually weak and rapid, ranging between 90 and 115. Without any previous abdominal trouble he was seized with an obstinate diarrhœa which lasted for ten days, when he died. The autopsy showed in the site of the sella turcica, a tumor resembling a ripe blue fig, which became detached from the infundibulum in the dissection. From this tumor a pediculated mass of much larger size extended beneath and to the right temporal fossa, unattached to either cerebral lobe, forcing its way through the base, orbito-nasal, and right side of the skull. The tumor exuded a dark grumous substance of a very offensive odor. The related bones had suffered extensive ravages. The optic nerves were reduced to mere threads. The pons and oblongata were atrophied to the size of the little finger. From subsequent examination Michell concluded that the growth was cancerous.

The author of this paper carefully reviews and summarizes the literature of diseases of the pituitary body; and to this paper I would refer those interested in the subject for the literature to that date. The cases brought together are of much interest from the pathological side, but teach but little as to the functions of the pituitary gland.

He holds that if we are warranted in drawing any conclusions respecting the nature or the functions of the pituitary body, from researches into its diseases and their most frequent symptoms, they would seem to be the following :

"First, that the pituitary body, however largely developed in some animals, is not a primary division of the brain, or a true encephalic ganglion, since its complete destruction is never accompanied by loss of intellection, motion or sensation, beyond what may satisfactorily be accounted for by the necessary pressure which the morbid growth exerts upon more essential parts of the encephalon.

"Secondly, that from several of the morbid processes enumerated in this memoir, we have strong proof of the identity of the nature of this hypophysis with certain so-called vascular glands such as the thyroid, thymus, spleen, and supra-renal capsules.

"Thirdly, that while the diagnosis of its morbid conditions is rendered somewhat obscure from the absence of any ascertained functions of the part, yet their almost constant connection with the simultaneous production of amaurosis in both eyes, with absence of symptoms of cross paralysis will indicate the seat of the disease, when compared to morbid states of either hemisphere.

"And fourthly, that the long continuance of disease in this situation may propagate inflammatory action to neighboring parts, followed by apathy, somnolency, syncope, cophosis, and other symptoms obscuring diagnosis."

DR. F. X. DERCUM.—With regard to tumors in the position of the pituitary body many of the members will remember the case of Dr. Weir Mitchell's of aneurism of an anomalous artery crossing the sella turcica. This aneurism was the size of a small pear. There were no symptoms other than headache, weakness, vertigo, and bi-temporal hemianopsia. The latter was enough to settle the diagnosis of the location of the tumor, and this was confirmed at the autopsy.

The next paper was an account of a case of

HYSTERICAL RHYTHMICAL CHOREA, CONTRACTURES, AND ANÆSTHESIA OF LONG STANDING—A CURE OR GREAT IMPROVEMENT ATTRIBUTED TO A VISIT TO LOURDES.

By CHARLES K. MILLS, M.D.

This patient began when she was about thirteen years of age with lumps in her throat and a barking cough. The latter lasted for several months, when she began to have a rhythmical tremor of her limbs. She was treated by various physicians, among others by Drs. Wirgman, O'Hara, Wood, and the writer.

Her troubles began about fourteen to fifteen years ago. A clinical lecture on her case, by Dr. H. C. Wood, reported by me, was published in the "Philadelphia Medical Times," February 26, 1881. The case was also referred to by me in a lecture on hypnotism in the "Medical Times," November 19, 1881. The following description from the lecture in the "Times" of February 26, 1881, will convey an idea of the character of the movements with which she was affected: "She lies in bed propped half up with pillows. Her forearms are held flexed on her arms at an angle of a little less than 90°, one hand usually near to or loosely thrown over the other. Her thighs are flexed on the pelvis at an angle of about 160°, and the legs and thighs at an angle of 110°. The limbs, held by clonic spasm in this position, are in a constant state of rhythmical vibratory movement. The forearms move up and down over a limited area, with the hands moving inward and outward, so that the knees sometimes strike together. The movements of the upper and lower extremities are in unison. At a number of counts they were from 110 to 120 per minute, the knees at each vibration moving about three inches."

The movements were still during sleep; she menstruated but once, and then imperfectly. The muscles of her back were weak, and she had, in 1881, acquired considerable curvature. Skin reflexes and knee-jerk were diminished, and she was anæsthetic below the knees. In brief, the case was a marked one of grave hysteria, the prominent symptoms being rhythmical chorea, decided contractures, changed reflexes, anæsthesia, and nearly total inability to walk. She could, at least during part of the time that she was under my observation, succeed in getting on her feet and making a little slow progress, although when doing this she was contracted and contorted into the most grotesque shape.

Many methods of treatment were employed unsuccessfully. They included the use of electricity; the whole round of nervous tonics and placebos ; putting the limb in fracture splints ; hypnotization; and the most strenuous efforts to make mental impressions and thus arouse her will. She became the object of great interest in her neighborhood; and at various times she was visited by priests, physicians, and curious or interested persons from a distance. At one time she was an inmate for some weeks of the hospital of the University of Pennsylvania, and of several other hospitals. Dr. O'Hara attended her at intervals for several years, when she passed out of his care but again came under it at St. Mary's Hospital last spring. He found her somewhat improved then as compared with her condition ten years before, but believes she was not, when he last saw her, able to walk.

In the early part of August of this year she started with her brother for the shrine of Lourdes; and it is stated that she was carried on board the steamship on a couch, and was transported in various ways, but without the help of her own limbs until she reached Lourdes. A journal published at Lourdes, reports that after a most painful journey she arrived there on August 12th, and that, being completely ignorant of the French language, she passed three days without being able to find the bathing pool, but once found, she bathed day after day; and on Friday, August 21st, she was able to walk. Soon after she started for home, and after her arrival in Philadelphia she became the subject of several sensational articles in the newspapers, which detailed her story and described her remarkable cure. Some of the accounts were highly colored, and were more interesting for their rhetoric than for their scientific accuracy, although on the whole her story was fairly told. One paper stated that the muscles of her arms and legs became calcified, which was its way of describing the condition produced by hysterical contractures.

With Drs. O'Hara and Wirgman, I have visited this interesting patient twice since her return and have carefully examined into her condition. I have also met her once in a street-car, and have thus had the opportunity of talking to her when she was not the subject of a medical or other visitation. Undoubtedly a great change for the better has taken place. The rhythmical chorea has entirely disappeared; the contractures are greatly improved, and have largely disappeared, although at the time of my last examination some contracture was still present, particularly in one of her legs. The anæsthesia has disappeared. She is now able to walk with comparative facility and ease, and not only goes up and down stairs and around the house, but frequently takes journeys out of doors, much to the benefit of her general health. Menstruation has not yet been established, and she still presents a marked curvature of her trunk, giving her a bowed and more decrepit appearance than her real muscular and general condition warrants.

This case, although by no means unique as some of our journalistic friends would have us believe, should interest all practical neurologists. In common with some others I had always held that her case was a curable one, although the persistence of her symptoms in spite of energetic and varied treatment was calculated to throw doubt on this prognosis, and many who saw her regarded her as consigned to the rank of the incurables. Into the miraculous nature of the "cure" it is scarcely necessary for us to enter. The Catholic Church, of which she is a devout member, would not accept such a case as miraculous until it had been thoroughly probed and proved. The case is impressive as showing the importance of powerful mental and moral impressions on such patients.

Hysterical rhythmical choreas of this type are certainly rare in this country; but, strange to say, I have seen another of exactly similar character, and of only a few weeks' duration within a month.

DISCUSSION.

DR. H. C. WOOD.—The history of the curing of disease by religious influences and religious emotions offers one of the most curious chapters in medical history. I have seen a case of apparently hopeless insanity, of fifteen years' duration, that had gone the round of the asylums, get well in a single night. Under some influence she got upon her knees and spent the night in prayer, and in the morning she was well.

I know of another instance, that of a Quaker preacher, who went with his wife to a certain meeting in Chester County. He was insane, apparently imbecile, and had not spoken for many months or even years. As he was sitting in the carriage by himself, another well-known Quaker preacher came up and laid his hand upon him, and quoted the well-known saying of Paul: "Silver and gold have I none, etc." Nothing more was said, and the preacher went into meeting. When the meeting was over the wife got in the carriage to drive home, when her husband said to her: "Sarah, had we not better go to Cousin John's for dinner." The woman nearly sprang out of the carriage in her excitement. That was the end of that man's insanity, as far as I know, permanently.

I have seen a whole family frightened into hysterics by a woman who had been in bed for fifteen years, seemingly incurable, with grave spinal anæmia, so-called, and marked hysteria, under the influence of a religious idea, the so-called faith-cure, walking downstairs and taking her seat at the table.

I cannot myself believe that these extraordinary cases are of the nature of miracles. I have seen one or two of these same indviduals seized with organic disease and rapidly die, one of them at least, apparently because of the refusal to accept medical aid. I have also seen as a result of this intense religious belief, the most horrible mental suffering that I have ever witnessed in a sane individual. A case suffering from organic disease became immensely impressed with the doctrines of the faith-cure, and as a result of prayer believed that she was cured of her disease, which had been present for many years and had marched steadily onward in spite of the best medical attention. To her friends I said that she was not cured, but that under the influence of emotion there had been a temporary arrest of her disorder, and that in a few weeks or months it would return. It did return. The person who had inculcated the doctrines of faith-cure told her that the disease had returned on account of her lack of faith. The woman firmly believed that the disease had returned on account of her own wicked lack of faith, and that she was drifting to death and eternal punishment, through a physical disease brought on by her own sins. This made a mental conflict that I have never seen equaled in a sane person.

I believe that all these cases are instances of the effect of mental impressions, and certainly do not believe in the present occurrence of miracles.

DR. M. O'HARA.—I treated this woman for years without the least benefit. Last May I saw her in St. Mary's Hospital, and I expressed the opinion that nothing medically could be done for her, as the ordinary medical means had been applied. I thought that the case had been in existence too long to be curable. She appeared then somewhat fatuous, and I thought that her brain-power had been reduced by her long illness. She never showed a full amount of brain or nerve power at any time when I visited her. She then went to the shrine of Lourdes and came back as she is. The history of the case has extended over some fifteen years. She, however, is not entirely cured, and I should not be surprised if the trouble would return if some severe illness occured. There is one thing that must be borne in mind, and that is that last spring her mother died, and possibly this compelled her to more animation, and to think for herself. She always expressed the desire to go to Lourdes, and felt sure she would be cured of her ailment if she reached there. The gratification of this overweening desire seems to have been followed by success, though her menstrual function has never returned.

I have been particularly interested in these manifestations at Lourdês. There they separate these cases of hysteria and consider them not as miracles, but as graces of returning health. Dr. Wood says that all these cases are the result of mental impressions. I think this is incorrect; and I have established in my own mind, from investigation, that absolute miracles occur at Lourdes, although I would not account this case as a miraculous cure, but one in which religious influences aided the natural processes. I would not consider it a miracle; to Sarah Ferry it is a miracle, however, as she goes about walking and doing her duties cheerfully, which she had not been able to do for so many years.

DR. CHARLES K. MILLS presented a

NOTE ON THE IRREGULAR DISTRIBUTION OF ANÆSTHESIA IN THE FACE IN CASES OF OTHERWISE COMPLETE HEMIANÆSTHESIA.

It is some times important to put on record a single fact, and even one which may in itself seem trifling, as such a record may suggest to others an explanation which does not strike the observer. It is in this spirit that I note what I have a number times observed, that in cases of hemianæsthesia, both organic and hysterical, the anæsthesia shows a particular tendency to irregularity in its distribution on the face. This irregularity exhibits itself in various ways, which may perhaps be best illustrated by referring to two cases, patients at present in the women's ward for nervous diseases in the Philadelphia Hospital. The first case is clearly organic in origin, and has already been described by me in a published lecture; the second, which is as clearly hysterical, with various distinctive phenomena of grave hysteria, such as aphonia, hemianæsthesia, hemiparesis with leg contractures, achromatopsia, and dyschromatopsia, etc., will be soon reported at length by my resident physician, Dr. Leys. The case of organic hemianæsthesia is probably due to an old hemorrhagic cyst which has destroyed the posterior portion of the right internal capsule—anæsthesia, paralysis and contractures being present in the left half of the body. She is totally anæsthetic to touch, pain, and temperature on the left half of the body, except in a small area on the face. This area of retained sensation includes the orbital region, the side of the nose, and the left cheek within a line drawn from the external angular process of the frontal bone to the alæ of the nose. It is curious also that the mucous membrane of the mouth is anæsthetic, except in an area which corresponds as nearly as could be determined, to the sensitive region of the skin. In the hysterical case, anæsthesia to pain and temperature—but not to touch—is complete on the right half of the body and extends across the median line so as to include the entire left side of the nose. In other cases I have noted complete hemianæsthesia, except that in the face, and on the head, both back and front, sensation was perfectly retained for a distance of an inch or more beyond the median line.

BROOKLYN SOCIETY FOR NEUROLOGY.

Meeting of December 9th, 1891.

DR. CHARLES COREY in the Chair.

The regular Monthly Meeting of the above Society was held at the rooms of the Medical Society of the County of Kings, 356 Bridge Street, on Wednesday Evening, December 9th, 1891,

The following members were present:

Drs. John C. Shaw, Wm. T. Lloyd, C. F. Barber, Wm. Browning and Thos. L. Wells.

SCIENTIFIC BUSINESS.

Dr. Wells presented clinical case; male age 48. Three years ago, after prolonged drinking, had attack of paraplegia and was confined to his bed for six months. Was delirious a portion of the time ; symptoms have gradually improved but has never been able to resume work. Complains of pains in legs, and weakness upon slight exertion; morbidly suspicious and irritable. Had syphilis twelve or fifteen years ago.

Dr. Shaw thought the case was originally one of alcoholic Praplegia, and would probably result in permanent breaking down both mentally and physically. Dr. Browning considered dementia as already well established. Dr. Barber thought the gait characteristic of an alcoholic. Drs. Lloyd and Corey suggesting that small doses of bichloride of mercury be given in addition to strychnine.

Dr. Barber read an interesting report of case of Tubercular Medingitis. The patient was a boy seven years of age. Tubercular history on father's side ; case was of peculiar interest on account of the rapidity with which symptoms changed ; at times cephalic ; crys frequent a portion of the time comatose, and hemiplegic towards end.

EXECUTIVE BUSINESS.

Dr. Lawrence Coffin was elected a member of the Society.

Dr. Charles Corey was elected President for next year, and Dr. Thos. L. Wells, Secretary and Treasurer.

Book Reviews.

THIERARZLICHES ARZNEIBUCH FUR STUDIRENDE UND PRAKTISCHE TIERARZTE.

THEIL II.

Toxikoligie, von J. Tereg und D. C. Arnold, Professoren an der König. tierartzlichen Hochschule zu Hannover, Berlin, 1892. Verlag, Enslin. Preis 10 Marks.

This volume contains 616 pages, and treats of a subject of much interest to medical practitioners. Prof. Tereg is well known to us by his admirable work upon Thierischen Wärme. In the book, the drugs are classified according to the clinical symptoms they produce. In the general part he considers the poisons, their mode of action, how their toxic activity is to be combated, and the chemical method necessary to detect them in the tissues. In the special part of the work he takes up each drug, giving its chemical constitution, the clinical symptoms, its chemical recognition and the best antidote. In a toxicological sense it gives all the leading facts of value.

After the drugs are discussed he takes up the ptomaines—mydalein, sapotoxin, gadinin, mydatoxin, and the cholin derivatives developed in vegetable and animal food. The cholin compounds generated in the uterus and intestinal canal are also noticed. Next he considers the tox-albumens, those already formed in the animal, as in snakes, bees, etc., and the already elaborated vegetable tox-albumens—ricin, abrin, with robin. In the last chapter he gives a full account up to date of the toxines and tox-albumens of the pathogenic schizomycetes, as found in cholera, phthisis, diphtheria, pneumonia, tuberculosis and rabies. This last part is the most interesting section of the book. This valuable treatise contains all the latest information upon the subjects spoken of. ISAAC OTT.

BOOKS, PAMPHLETS, ETC., RECEIVED.

ETUDES SUR LES MALADIES CEREBRALES ET MENTALES. Par Le Dr. Jules Cotard, Paris. *Baillière et Fils.*

CIRCUMCISION. By Dr. P. C. Remondino. Publisher, F. A. Davis, Philadelphia, Pa.

SELF-EXAMINATIONS FOR MEDICAL STUDENTS. P. Blakiston, Son & Co., Philadelphia, Pa.

THE NEUROSES OF DEVELOPMENT. By T. S. Clouston, M.D. Publishers, Oliver & Boyd, Edinburgh.

LAPAROTOMY. By Dr. McIntyre. (Reprint.)

DYSMENORRHŒA AND ITS ALLEVIATION. By G. C. Eggert, Jr., M.D. (Reprint.)

REPORT OF THE SURGEON-GENERAL OF THE ARMY, FOR THE YEAR ENDING JUNE 30, 1891.

AN ABSTRACT OF THE SYMPTOMS, WITH THE LATEST DIETETIC AND MEDICINAL TREATMENT OF VARIOUS DISEASED CONDITIONS. By Reed & Carnrick.

MANUAL OF PHYSICAL DIAGNOSIS. By James Tyson, M.D. P. Blakiston, Son & Co., Philadelphia.

HANDBOOK OF MATERIA MEDICA, PHARMACY AND THERAPEUTICS. By Samuel O L. Potter, A.M., M.D. Third Edition, Revised. P. Blakiston, Son & Co., Philadelphia.

THE JOHNS-HOPKINS HOSPITAL REPORTS. Vol. II., Nos. 7, 8, 9. Report in Pathology.

AMŒBIC DYSENTERY. By Dr. Wm. T. Councilman and Henri A. Safleur. The Johns-Hopkins Press, Baltimore.

SPASMODIC WRY-NECK AND OTHER SPASMODIC MOVEMENTS OF THE HEAD, FACE AND NECK. By Noble Smith, F.R.C.S.

A CASE OF LOOSE BODY IN THE KNEE-JOINT. By M. S. Kakeles, M.D. (Reprint.)

SOME OBSERVATIONS ON DYSPEPSIA. By P. C. Remondino, M.D. (Reprint.)

INFLUENCE OF HEREDITY IN PRODUCING DISEASE AND DEGENERACY, THE REMEDY. By Gonzaloa C. Smythe, A.M., M.D. (Reprint.)

CHOREA IN RELATION TO CLIMATE, ESPECIALLY THE CLIMATE OF COLORADO. By J T. Eskridge, M.D. (Reprint.)

AXIS TRACTION AND A COMBINED AXIS TRACTION FORCEPS; ALSO AN ANTICRANIOTOMY FORCEPS, TO BE USED AS A SUBSTITUTE FOR CRANIOTOMY AND VERSION IN PELVIC DEFORMITIES. By T. J. McGillicuddy, M.D. (Reprint.)

A STUDY IN ÆROTHERAPEUTICS. By Samuel S. Wallian, M.D. (Reprint.)

A PLEA FOR THE EXTRA-PERITONEAL TREATMENT OF THE STUMP IN ABDOMINAL HYSTERECTOMY FOR FIBROIDS. By A. Lapthone Smith, B.A., M.D. (Reprint.)

THE WORK OF MEDICINE FOR THE WEAL OF THE WORLD. By C. H. Hughes. M.D. (Reprint.)

A NEW METHOD OF TENOTOMY; FOUR OPERATIONS FOR APPENDICITIS; A FURTHER COMMUNICATION ON A NEW METHOD OF COMPRESSING THE SUBCLAVIAN ARTERY. By W. W. Keen, M.D. (Reprint.)

EYESIGHT: ITS CURE DURING INFANCY AND YOUTH. By L. Webster Fox, M.D. (Reprint.)

THIRD ANNUAL REPORT OF THE NEW AMSTERDAM EYE AND EAR HOSPITAL OF NEW YORK, FOR THE YEAR ENDING MAY 12, 1891.

TUMORS OF THE NASO-PHARYNX, PHARYNX, LARYNX AND ŒSOPHAGUS. By W. Cheatham, M.D. (Reprint.)

SOME POINTS ON THE LOCAL THERAPEUTICS OF DISEASES OF THE NOSE AND THROAT. By Wendell C. Phillips, M.D. (Reprint.)

NOTES ON ARISTOL IN THE TREATMENT OF THE DISEASE OF THE NOSE AND THROAT. By Wendell C. Phillips, M.D. (Reprint.)

THE STATISTICS AND LESSONS OF FIFTEEN HUNDRED CASES OF REFRACTION. By Geo. M. Gould, M.D. (Reprint.)

ON THE RELATION OF THE TEMPERATURE OF THE GROIN TO THAT OF THE RECTUM IN THE RABBIT, BOTH NORMALLY AND AFTER DESTRUCTION OF THE CEREBRAL CORTEX. By W. Hale White, M.D., and J. W. Washbourn, M.D. (Reprint.)

ON THE POSITION AND VALUE OF THOSE LESIONS OF THE BRAIN WHICH CAUSE A RISE OF TEMPERATURE. By W. Hale White, M.D. (Reprint.)

TRAP-SIPHONAGE AND TRAP-SEAL PROTECTION. By. Prof. J. E. Denton. (Reprint.)

TWENTY-THIRD ANNUAL REPORT OF THE INEBRIATES' HOME, FORT HAMILTON, N. Y., FOR THE YEAR 1890.

ELECTRICITY IN CARCINOMA. By Robert Newman, M.D. (Reprint.)

THE CLIMATE OF SOUTHERN CALIFORNIA IN RELATION TO DISEASE. By Wm. A. Edwards, M.D. (Reprint.)

BIENNIAL REPORT OF THE BOARD OF TRUSTEES OF THE MILWAUKEE HOSPITAL FOR INSANE, FOR THE TWO YEARS ENDING SEPTEMBER 30, 1890.

SECOND REPORT OF THE SUPERINTENDENT OF THE JOHNS-HOPKINS HOSPITAL, FOR THE YEAR ENDING JANUARY 31, 1891.

STATE BOARD OF HEALTH BULLETIN, NASHVILLE, TENNESSEE, AUGUST 20, 1891.

"THE APOTHECARY." Vol. I., No. 1.

PRESENTATION OF TWO POINTS, ILLUSTRATING THE FAVORABLE PROGRESS OF SUPPURATIVE KNEE-JOINT DISEASE. By Milton Josiah Roberts, M.D. (Reprint.)

ANNOUNCEMENT, MEDICAL DEPARTMENT, UNIVERSITY OF WORCESSTER, FOR 1892.

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OF
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A MONTHLY PERIODICAL

EDITED BY

CHAS. HENRY BROWN, M.D.,

NEW YORK,

WITH THE ACTIVE CO-OPERATION OF

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FEBRUARY, 1892.

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Dr. Wm. A. Hammond, of New York, Surgeon-General U. S. Army (retired), Professor of Diseases of the Mind and Nervous System in the University of New York, etc.

"I have for some time made use of the Buffalo Lithia Water in cases of affections of the *Nervous System*, complicated with *Bright's Disease of the Kidneys*, or with a *Gouty Diathesis*. The results have been eminently satisfactory. Lithia has for many years been a favorite remedy with me in like cases, but the *Buffalo Water certainly acts better than any extemporaneous solution of the Lithia Salts*, and is, moreover, better borne by the Stomach. I also often prescribe it in those cases of *Cerebral Hyperæmia* resulting from over-mental work—in which the condition called *Nervous Dyspepsia* exists—and generally with marked benefit.

James L. Cabell, M. D., A. M., LL.D., Professor of Physiology and Surgery in the Medical Department in the University of Virginia, and President of the National Board of Health.

"I have recently read with interest a paper in 'The New York Medical Journal' on the Buffalo Lithia Water in Diseases of the *Nervous System*, in which the writer, Dr. Boyland, citing his own observations and those of other eminent physicians, ascribes to this Water a special virtue as a direct tonic for the *Nervous System* in cases of *Cerebral* exhaustion. I have only had occasion to test its effects in this direction in cases in which the *Nervous Symptoms* may have been due to a *Lithæmic* condition. *In these cases the relief following the use of the remedy was very decided.*"

Dr. Thomas H. Buckler, of Paris (formerly of Baltimore), *Suggester of Lithia as a Solvent for Uric Acid.*

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VOL. XVII. February, 1892. No. 2.

THE Journal OF Nervous and Mental Disease.

Original Articles.

A CASE OF TUMOR OF THE CEREBELLUM, IN WHICH TREPHINING WAS DONE FOR THE RELIEF OF INCREASED INTRA-CRANIAL PRESSURE.[1]

By PHILIP COOMBS KNAPP, A.M., M.D.,
Clinical Instructor in Diseases of the Nervous System, Harvard Medical School.

INASMUCH as the indications for surgical interference with intra-cranial growths are not yet absolutely determined, it has seemed worth while to report the following case, as one of the first where operation was undertaken primarily to relieve symptoms, rather than to effect a cure.

The temporary relief afforded by opening the skull and thus diminishing the intra-cranial pressure has been made evident by the results following certain operations, where either the new growth was not found or it was too large or too deeply seated to be removed. At the first Congress of American Physicians and Surgeons, in 1888, Weir suggested the propriety of trephining to relieve symptoms in cases where the new growth was inaccessible or where its seat could not be determined. At the Tenth International Congress in Berlin, in 1890, Horsley urged the advantages of such a procedure, and mentioned six cases where he had trephined, simply to relieve pressure, with beneficial results. In some of the other cases of operative interference, relief of pressure seems to have been one indication for the operation, but it was not the primary object. Horsley's six cases and the case about to be reported are, as far as I can learn, the only cases where relief of pressure was the primary object. In a recent contribution on the subject I unfortunately overlooked Weir's suggestion made in 1888, but the credit of the suggestion belongs to him and not to Horsley.

---

[1] Read before the American Neurological Association September 22, 23, 24, 1891.

On the 30th of October, 1890, I was asked to see R. W., a lawyer, unmarried, aged 28; born in this country of German-Jewish parents. The family history was negative. His own previous history was good, except that at the age of seventeen months he had acute anterior poliomyelitis, and the left leg was left paralyzed and atrophied. Venereal disease and the excessive use of alcohol were denied, but he had smoked freely.

For several years he had had constipation and some indigestion ; this was attended with occasional dull headache, but he considered himself well until the spring of 1889. About this time he began to have severe headache in the right occipital region. He grew irritable, left his home and lived by himself for some time, refusing to have anything to do with his family, and seldom seeing his friends. The headache increased during the summer, until early in October it was so severe that he went to bed and stayed there a week, when it ceased. On getting up he began to notice an occasional black cloud before the eyes, dimness of vision and diplopia ; at times he saw three or even six objects. On the 24th of October, 1889, he consulted Dr. O. F. Wadsworth, who found no external abnormality about the eyes. The pupils were rather large, but they reacted normally. The field of vision was unimpaired and the movements of the eyes were well performed. The tension was moderate, v. o. d. *c.* + o. 5. = $\frac{14}{12}$, v. o. s. *c.* + 1. o. cyl. = $\frac{14}{15}$. Accommodation diminished ; o.d. read 5 Snellen at 15 inches; o.s. *c.* + 1.o. cyl,. read 5 Snellen at 12 inches. There was pronounced pupillitis in both eyes, extending farther and being more prominent in the right. There

were many fine vessels but no hæmorrhages. Th
elsewhere was normal.

About this time he had one or two attacks in
cried out. He was never seen at the onset of any
but he frothed somewhat at the mouth and fell on t
The face was red and looked drawn. He stated him
in these attacks there was merely a faint feeling al
heart when he had indigestion, at which time his hear
comfortable. The headaches continued and becar
severe, being situated for the most part in the occip
times affecting the frontal or temporal regions. I
plained of a feeling of pressure, as if a bar were being
through his temples. About the same time he had
nausea and vomiting, immediately after which the pa
head became excruciating. This pain in the head ha
of exacerbation, in which it becomes so intense as t
him slightly delirious. With the beginning of the
he lost the sense of smell. The eyesight failed
until in August, 1890, the last perception of light
Vision was retained longer in the left eye than in t
One day after a severe attack of nausea, the vision
temporarily.

He consulted Dr. G. F. Jelly, who gave him i
potassium in forty-grain doses, which he took for
year, but somewhat irregularly. This had produc
marked iodism when I saw him. Phenacetine, in
grain doses, had, during this time, kept the h
endurable, but within a few weeks he had requir
doses of morphine.

For three weeks before I saw him he had notic
tinct failure of hearing in the left ear. For some
had complained of peculiar sensations in the mouth
distorted, the upper lip felt swollen and as if so
were clinging to the roof of the mouth, the ton
gums, and the soft palate. The cheeks felt numb
lowing was fairly well performed, but he made con
difficulty in swallowing. He found food hard t
and thought the teeth made no impression on
could swallow hot substances better than col
able to drink hotter liquids than ordinary peo
complained much of thickness of speech, due, as h
the distortion of his mouth and to the peculiar feeli
roof of the mouth. The hands also for six weeks
as if they were asleep, and the nose felt numb. Fo
he complained of profuse salivation, and found i
swallow the saliva.

There had also been pain in the eyes, and he had had occasional flashes before them. Of late he slept poorly. He was at times rather querulous, but no failure of mental power could be detected. He was quick and ready in conversation, was fond of listening to reading, and kept thoroughly informed on all the questions of the day. The speech was somewhat thick and the articulation was not very distinct, but there was no more disturbance than is often noted with healthy people, no stumbling over syllables, no incorrect use of words, nor any difficulty in comprehending what was said.

Except for the faint feelings at the beginning of the trouble there had been no disturbance of the thoracic organs. His appetite had been good until a short time before I saw him, and, except for constipation and the attacks of nausea,. he had had no indigestion. He had gained in weight during the summer. At times he had an urgent desire to urinate, but when he attempted it he could not perform the act for some time. He passed water frequently and in large amounts. With the failure of vision and his lameness, he had had some uncertainty in walking, but nothing like a staggering gait. There had been but little vertigo, For a week or more his family had noticed a little swelling of the face, most marked on the left side, but there was no distortion; within a few days the swelling had seemed greater on the right.

The patient was well developed and well nourished. The left leg and thigh were much wasted, cold to the touch, and the foot presented the characteristic deformity of poliomyelitis—talipes equino-varus. There was a pustular iodide acne over the nose and forehead. The eyes were kept partly closed, but he could open them fairly well, the levator muscles seeming a trifle weak. The right eye was not moved outwards quite so far as the left. The right side of the upper lip and of the tongue was a little swollen, and the right naso-labial fold was a trifle less pronounced. Otherwise the movements of the eyes, face and tongue were normal, but the masseters were not very strong. The pupils were dilated, equal, and reacted to convergence though not to light. Vision and smell were lost. Hearing in the left ear was much diminished; he could understand only when I spoke in a loud tone. Sensibility to temperature was good, except that it was very slightly diminished in the left cheek; sensibility to touch was everywhere normal. Dynamometer: right, 50 kg.; left, 35 kg. He grasped the dynamometer somewhat clumsily with the left hand. Otherwise no ataxia was noted. The pulse was 100. Examination of the thoracic organs was negative. The muscles of the face and jaws reacted normally to faradism. The membrana tympani showed nothing remarkable. There was double optic neuritis. The reflexes were normal, except that there was no knee-jerk in the left leg. The gait was natural, and there was no uncertainty of station on closing the eyes. There was no tenderness on percussing the skull.

On the 6th of November he was still suffering from severe pain in the head, usually of a shooting character, and involving the right eye and right side of the face. Although the iodide had been discontinued, the numbness in the face, the peculiar sensations in the mouth, the stiffness of the jaws and the trouble in chewing, and the subjective difficulty of speech had increased. The numbness of the hands was greater and most marked on the ulnar side. The tactile sensibility of the left side of the face was perhaps a trifle diminished. The tactile and muscular sensibility of the hands was good. The masseters were weak. The tongue protruded to the right, but he could protrude it to the left. Of late he had been restless and slept poorly, and he twisted his hands as if the numbness were uncomfortable. Salivation was increased, and he would spit frequently, but he could swallow well. There was a tender spot on the right temple, and pressure or percussion caused a deep-seated pain. He had considerable itching of the nose and face. Pulse, 104.

I advised an operation, and the family took it under consideration. For several weeks, however, he had a distinct remission of the severe pain, so that nothing was done; but the pain returned, and I was called in again on the 8th of January, 1891. The headache had then become more severe. The unpleasant paræsthesiæ about the mouth persisted. He had a sensation in the left ear as of bubbling. For a time that night his right arm felt as if it were paralyzed. The numbness of the hands persisted. He made up his mind to an operation, viewed the prospect cheerfully and courageously, and was the only one of the family to keep in good spirits. He was admitted to the Boston City Hospital the 12th of January, 1891.

On the 13th his ears were examined by Dr. J. Orne Green, who made the following report:

"Deafness first noticed in left ear six months ago. A buzzing was noticed before this. The deafness was continual, now is intermittent. Right ear, no trouble till three months ago. The pain commenced on the left side and now is sharp, shooting like the beating of the pulse. No dizziness at any time. Does not talk of any high-pitched noises. Both drum membranes a little dull and very slightly contracted. They are both free from any signs of congestion, as also is the meatus.

W. v. $\frac{16}{48}''$: l. $\frac{6}{48}'' = 0$.

V. v. $\frac{10}{38}''$: l. moderate only through speaking tube.

Weber, F. C. on teeth, r. > l., on forehead, not head.

Rinne, F. C. r. $\frac{ac}{bc} = \frac{20}{12}''$: l. $= \frac{0}{10}''$.

Both ears show defective hearing; right slight; left extreme. Both show defective bone conduction, nothing abnormal visible. Left ear gradual loss of hearing, coming on only after gradual loss of smell, sight, and many other symptoms, would lead me to suppose that the disease did not directly affect the auditory apparatus, but that it was possibly involved from gradual pressure from a distance.

14. W. r. $\frac{30}{80}''$ l. $\frac{6}{80}'' = 0$.

V. v. $\frac{10}{25}''$: l. only through tube.

F. C. $\frac{ac}{bc}$ v. $\frac{20}{15}''$ l. $\frac{0}{10}''$.

F. C. v. > l.

In left perception of F. C. and F. A. through diagnostic tube.

14 January. No distinct loss of muscular sense in either arm, yet he seemed a trifle uncertain in his movements. The tactile sensibility was normal. The knee-jerk was absent in both legs. His gait seemed a little uncertain, perhaps more uncertainty than ought to be attributed to his blindness and lameness, yet nothing very material.

15. Since entering the hospital he has been comparatively comfortable, having a good appetite, sleeping well, and having no severe pain. He required cathartics and phenacetine.

17. The knee-jerk was present in the right leg. He complained much of numbness and prickling in the right hand, but there was objectively no disturbance of sensibility. He had rather more headache, which was relieved by a cathartic. Urine high colored; acid, 1028; no albumen or sugar. Sediment, a few crystals of calcic oxalate and uric acid.

18. He has had one or two periods of severe pain, although less severe than usual. Once he required morphine. He detected the odor of cologne used about him, and noted a shadow passing before his eyes. Examination of the chest was negative. The head was shaved, the fissure of Rolando marked by the Thane-Horsley method,

and the fissure of Sylvius by the rule given by Dana; and observations were made of the surface temperature.

Just below the beginning of the fissure of Sylvius,	R. 98 1-4°	L. 98 1-2
6 cm. above external angular process,	96 1-4	96 1-2°
Parietal eminence,	97	97
4 cm. back of the upper end of the fissure of Rolando, and 3 cm. from the median line,	95 1-2	95 3-4
8 cm. back of the upper end of the fissure of Rolando, and 3 cm. from the median line,	96 1-2	96 3-4

The tender spot in the right temporal region still persisted.

19. Ether was given and Dr. E. H. Bradford operated. The operation was done with the patient in a sitting position. A curved incision seven or eight inches long was made in the right parietal region, two or three inches above the ear. The flap was turned down and the periosteum scraped off. A trephine button an inch in diameter was removed just posterior to the anterior end of the fissure of Sylvius. Upon removal of this button the dura was found pulsating, and it bulged distinctly through the opening. Another button was removed just posterior to this, and the bridge of bone between was broken away and the opening somewhat enlarged with rongeur forceps. The dura was then opened and the brain substance palpitated with the finger, which was carried under the edge of the opening for an inch or an inch and a half in every direction. No increase of resistance was detected. The brain substance felt somewhat fluctuating, and it was incised, and a probe was inserted for three-quarters of an inch. No new growth was detected. The wound was irrigated with warm solution of corrosive sublimate, 1-10,000; the dura was replaced, but it was not sutured; the flaps were sutured with cat-gut, and a sterilized dressing and a gauze bandage were applied.

He recovered from the ether without nausea or vomiting. The pulse was regular and of good strength, and the general condition was favorable. There was some discomfort in the head, but no great pain.

20. A comfortable day. No rise of temperature. Pulse still regular and of good strength. He is somewhat restless at times, and complains of soreness of the head, especially on moving it. Slept well and took some food.

21. Condition unchanged. He dozes a good part of the time. He has no severe pain and takes a fair amount of

food. Bowels moved by enema. He lies quiet and is not inclined to talk. His friends think that his hearing has become much more acute since the operation, but Dr. Green fails to find any difference.

22. Dressing changed. Wound healing well without suppuration. New dressing applied.

23. He talks more but was a very little delirious. The dressing was found moistened with a clear fluid. He complains of slight pain in the wound.

24. He is more comfortable and he has less soreness, The appetite is good and he sleeps fairly. He has phenacetine and sulfonal as required.

25. He talked strangely this morning as if wandering, but he was perfectly rational in the afternoon. He complained of pain in the occipital region.

Dr. Green reports: "The patient thinks that he can hear better, but on testing with the watch and fork no marked changes can be discovered."

26. Wound dressed. Flaps firmly united. There is a bulging at the seat of operation the size of half an orange, over which the cerebral pulsation may be seen and felt. Considerable pain this afternoon, controlled by phenacetine. He had a sensation as of smoke in the throat, and a taste of smoke, and he asked where it came from. He complains still of thickness of the tongue.

27. Dressing removed and wound dressed with absorbent cotton and collodion. The tongue is protruded to the left and the left side of the mouth is drawn up. The grip of the hands is equal. He still has pain in the wound.

28. The same symptoms of paralysis persist. He had a comfortable night and the appetite is fair. The bowels move only by the aid of cathartics. He is perfectly rational, but since the operation he has been irritable and fault-finding. He is very much disappointed that he has not regained his sight. He was anxious to return home, and therefore was discharged.

On his return the hernia was the size of half an orange, and the extreme posterior end of the incision was still ununited. He complained a good deal of soreness of the wound, but he was free from the old pain. There was complete left hemiplegia and hemianæsthesia. He was querulous and hard to get on with. Most of the time he was somnolent, yet he perceived what was going on, although his memory of events was not good. The somnolence persisted and increased. He complained much of soreness. There had been more or less oozing of blood from the posterior end of the incision, and about the 7th of February some fragments of brain substance appeared. The incision was gradually opening, and a slightly offensive odor came from it.

On the 14th, having become very nearly comatose, he began to have a profuse watery discharge from the wound, and on the 16th he began to improve. After this he was free from pain, he was mentally clear and bright, he sat up, enjoyed seeing his friends and listening to reading, and felt very well. There was no irritability or querulousness, but he was somewhat despondent because his vision did not return, as he had hoped. The hemiplegia and anæsthesia persisted.

He remained in this condition of comfort and freedom from pain, with the hernia gradually sloughing, and the discharge of fluid persisting until March 7th, when he was suddenly seized with most intense pain. He soon became comatose; the pulse and temperature rose rapidly; he could not be roused, and he died on the 9th.

An autopsy was made twenty hours after death, only the head being opened. There was a large sloughing hernia projecting through the skull, and the skin and the brain membranes were adherent to the edges of the opening. Extending upwards from the opening was a large ecchymosis in the external periosteum of the skull. The hernia was sliced off and the brain removed. Except for the hernia and the adherent meningitis nothing was noticed about the external surface of the brain, except some congestion. The blood-vessels of the base were normal. The calvaria was of good thickness, and showed no sign of absorption. The left half of the cerebellum seemed larger than the right. The brain was hardened as a whole in chloride of zinc for further examination.

After the hardening, during which the shape of the brain was unfortunately not so well preserved as might have been desired, the striking feature was a marked curving of the longitudinal tissue, the convexity pointing to the right. Owing to this the upper end of the right fissure of Rolands was over two centimetres in front of the left. The base of the hernia was of considerable size. It extended from the transverse retro-central sulcus posteriorly to the middle of the triangular part of the third frontal convolution anteriorly, and from the middle of the first temporal convolution inferiorly to the lower end of the superior precentral sulcus superiorly; involving the lower parts of the ascending parietal and ascending frontal convolutions, the posterior end of the third frontal, and a little of the second frontal, the superior temporal, and a little of the inferior parietal lobule. The ventricle, which was considerably enlarged, communicated with the opening in the hernia. The convolutions about the upper end of the right fissure of Rolando were as large, and apparently as well developed as those on the other side.

The cerebrum and the basal ganglia were normal. The left lobe of the cerebellum was enlarged, and was found to contain a large neoplasm, measuring about three centimetres antero-posteriorly and transversely, and about a centimetre and a half in thickness. It had a dense capsule, and the interior was of a semi-solid consistency. On microscopic examination it proved to be a tubercle. Its posterior end was within six or eight millimetres of the posterior tip of the cerebellar hemisphere, it lay close up to, but not involving, the vermis cerebelli, and was close to the upper surface of the cerebellum.

The case presented no distinctive focal symptoms. By exclusion, therefore, I decided that it was probably in one of three places—in the right temporal lobe or in one of the lateral lobes of the cerebellum. The uncertainty was too great to warrant undertaking its removal, but I felt that we were justified in trephining to relieve the increased intracranial pressure. Such being the case I advised trephining over the right temporal lobe, being influenced by the local tenderness, the increased surface temperature in that region, the early loss of smell, and the deafness. The event showed that these indications were fallacious.

The operation was in part successful. It undoubtedly shortened the patient's life, but, for a time, it gave him relief from pain. In subsequent operations I should advise in the first place making a larger opening; and, in the second, tapping the lateral ventricles. In a similar case recently reported by Duncan[1] this was done with some relief. The abundant fluid discharge was probably from the ventricles, and contributed much more to the patient's relief than did the mere removal of the buttons of bone.

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[1] Philadelphia Hospital Reports. Vol. I.

HYSTERIA IN THE MALE FOLLOWING SYPHILIS.

In Médicine Moderne, November 19, 1891, there is an account of the foregoing condition in a man treated and exhibited by Dr. Fournier. Infection ran its normal course for nearly three months ; then appeared such nervous complications as heaviness in the head, stumbling and tears without cause. Rising one night the patient fell, and on getting up found himself unable to speak. There seemed to be terrible noises about him. Fits of laughter would come on, induced or increased by the sight of bright objects. There was also well-marked left hemiplegia. Under the influence of the iodide these symptoms disappeared, except the attacks of laughter. To better overcome these the patient placed himself in the Hospital St. Louis. Here regular specific treatment cured all constitutional and nervous trouble, but too early departure from the hospital was followed by syphilitic manifestations, fits of laughter and other previous nervous symptoms, together with hemi-anæsthesia on the left side. There was subcordial oppression, a real anguish before each peal of laughter, with globus hystericus. While in the hospital, at almost the same hour each day, there was clouding of the intellect. The patient took no notice of what passed around him, did not know what he himself was doing, and had no recollection afterwards of what had happened. There was no history of previous hysterical manifestations, no neuropathic heredity or predisposing cause other than syphilis. Dr. Fournier looks upon this case as most instructive. The development of secondary symptoms is always a period of extreme nervous tension. Among women hyperalgesia and neurasthenia frequently appear at this time. And these troubles from a similar cause may also appear in men.

L. F. B.

AN INDICATION FOR TREATMENT IN HEMIFACIAL ATROPHY.[1]

By F. X. DERCUM, M.D.

Instructor in Nervous Diseases, University of Pennsylvania, Neurologist to the Philadelphia Hospital.

OUR knowledge of the pathology of hemifacial atrophy is still very meagre. It has been proposed to explain this disease in various ways: First, that it is due to an idiopathic atrophy of connective tissue elements; secondly, that it is secondary to some affection either of the sympathetic, the facial or the trigeminal nerves. To suppose it to be due to an idiopathic atrophy is to beg the question. and further gives no explanation of the remarkable limitation of the affection. To suppose disease of the sympathetic is not warranted by the symptoms. There is a conspicuous absence of vascular dilatation or pupillary phenomena. To suppose the facial nerve to be at fault also fails to accord with the facts. It is well known that the muscles are not conspicuously involved, apparently in some cases not at all. Further there is no paralysis, nor are there any electrical changes in either nerve or muscle.

That the fifth nerve may in some way be related to the cause of this trouble is not improbable; on the contrary, it is in the highest degree probable. There are, in the first place, certain facts which point to direct participation by the trigeminus. These are: first, the sensory disorders. It is true that anæsthesia is very rarely present however; the neuralgic pains, the toothache present in the beginning of some cases, the darting pains present in others are of undeniable significance. Secondly, the spasmodic contractions which have been observed in the motor distribution of the fifth—rarely, it is true—can have but one meaning. Thirdly, the distribution of the atrophy along the three branches of the trigeminal and its limitation to these parts is in the highest degree suggestive. Finally, within a few years these speculations have been strengthened by the results of a post-mortem examination made by a man of no less skill than Mendel.[1] The patient was a woman whose case had at different times been studied by Romberg and Virchow, and who finally died of phthisis. Mendel found atrophic changes in the descending root of the trigeminus, while the other root was normal. It would seem, therefore, that the descending root contains the trophic fibres. The fact that the ascending or sensory root was found to be normal is in accord with the preservation of cutaneous sensibility. Further, if the inference be correct that the descending or motor root contains the trophic fibres, it must be equally true that these trophic fibres are not in their final distribution limited to the muscular branch of the nerve but accompany the sensory branches as well.

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[1] Read before the Philadelphia Neurological Society, Nov. 23, 1891.

Now, no treatment has ever been proposed for this affection that has yielded any definite result. This is true alike of electricity, massage, and internal medication. The outlook as regards recovery has always been regarded as hopeless. The only consolation that has been held out to the patient is that the disease might some day cease of its own accord—certainly a meagre satisfaction when we reflect that spontaneous arrest does not take place in the majority of cases until the deformity has attained very great proportions. It is certainly anything but a pleasant prospect to know that the disease will not be arrested until the entire cheek is sunken in, the jaw shriveled, the teeth lost and the nose twisted to one side. Assuredly if anything can be done to avert this distressing result, it should be attempted.

The following somewhat radical expedient has suggested itself to the writer. It is a well-known fact, based upon repeated and familar experience, that section or excision of the various branches of the trifacial for the relief of neuralgia is not followed by any atrophic changes. *It would seem, therefore, that in hemifacial atrophy the disease depends not so much upon a failure of trophic nerve stimulus*

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[1] Mendel, Deutche med. Ztg., 1888, 33. p. 407.

as upon a radical perversion of that stimulus. If it depended upon a simple failure of trophic stimulus, simple arrest of development, simple diminution in the amount of growth would be the result. Here, however, we have instead an aggressive, an invading process, an actual tearing down and reabsorption of structure. Evidently the indication is to interrupt the communication between the trophic centre and its peripheral distribution. The expedient, then, which I would propose is resection of the various branches of the trifacial as far as accessible, the operation to be undertaken at as early a date as possible. In order that a maximum amount of benefit should result, it is of course essential that the correct diagnosis be made at an early day—as soon, if it be possible, as the ominous white patch, the initial change in this dreadful disease, makes its appearance on the cheek.

The only unpleasant consequence of resection of the trifacial nerve is the anæsthesia, and to this, as experience shows, patients soon adapt themselves. Should the expedient fail little or no harm will have been done. Certainly, in the present aspect of the disease any expedient offering even remote chances of benefit should receive most careful consideration.

ASTASIA-ABASIA.

The Gazette Hebdomadaire de Médicine et de Chirurgie, November 28, 1891, quoting from an Italian journal, records Dr. Enrico Pittaluga's case of astasia-abasia in a child nine years old, following an attack of typhoid fever. The child could not walk a step by himself, though he could climb and descend a ladder rapidly. In repose the child seemed in every way normal and could walk with assistants on each side, though he fell if left to himself. Motion, sensation, and reflexes presented no abnormity, neither was there hysterical stigma of any kind. The condition of astasia-abasia disappeared suddenly. Blocq observed in regard to a similar case that, though the patient was not hysterical in the literal sense of the word, there was present a decided predisposition to neurosis. L. F. B.

SUBACUTE RECURRENT MULTIPLE NEURITIS.[1]

By J. T. ESKRIDGE, M. D.,

Denver, Col.

GENTLEMEN : I wish to call your attention to-day to this case, on account of the interest that it presents:

J. G., age 27, a butcher, for a number of years, but the last two or three years he has been a bartender. He came to Colorado nine years ago. Mother died of consumption ; father healthy. There are no nervous diseases in the family, and he himself was well until his eighth year, when he began to suffer with slight attacks of shortness of breath, for which he came to Colorado ten years ago. He denies syphilis and gonorrhœa, although he has been exposed a number of times. He began beer-drinking when twelve years old. He says he did not drink to excess for a few years. He thinks for eight or ten years he has been in the habit of taking several drinks of beer, sometimes whiskey, daily. Three years ago he suffered from weakness of the muscles of the legs below the knees and had some pain and loss of feeling in feet and hands. He does not remember whether his hands were weak or not. He says the pain was not sharp, but simply a dull, sore feeling. He was confined to his bed about three weeks. After this he was able to walk, with the aid of canes, for three weeks; but it was three months after leaving his bed before he was able to return to his work. During the stage of convalescence, weakness of the legs and inability to stand firmly, bothered him most. Sometimes while walking alone he would fall, because his legs seemed unable to support him.

After this sickness he thinks he enjoyed fairly good health until about the middle of June of the present year, when he again experienced pain in the feet and legs, attended with weakness in the muscles of the legs below the knees. The hands and arms, he thinks, were weak, but not the seat of pain. He seems not to have been totally disabled at this time, and a week later, when a spectator at athletic sports, he lay down in the open air and went to sleep, and after an hour or two, on awakening, he found himself thoroughly drenched with rain. This occurred about 4 P.M., and the evening of the same day he began to suffer with soreness in the muscles of the legs below the knees. Parts affected were below the knees almost entirely, although he had some slight numb sensations in the hands. Four or five weeks after this, he was able to walk without the assistance of canes or crutches. During this time there was pain and soreness in the calves of the legs, attended with great weakness of the muscles below the knees. The forearms and hands were weak, but not the seat of much pain.

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[1] A clinical lecture delivered at the Arapahoe County Hospital, Oct. 3, 1891.

After this attack he enjoyed fairly good health until two weeks ago, when, after over-exertion, causing him to perspire freely, he drank an immoderate quantity of cold beer. The next morning he felt weak and depressed, and by noon was quite ill. He suffered with sore feelings and numb sensations in the legs below the knees, and slight weakness and sore feelings in the muscles of the forearms. During the next week he felt decided numbness in the calves of the legs and a slight numb sensation with sore feelings in the hands and forearms. The perverted sensations and loss of motion was about the same on both sides. He did not experience a great deal of pain except on trying to walk, when the pain was decided in the calves of the legs. He was able to walk with the assistance of a cane when admitted to the hospital on Sept. 20, 1891, about one week after the appearance of the symptoms just described. On admission he complained of rheumatism in his legs, and was placed under the care of the general physician without an examination, patient's diagnosis of rheumatism having been accepted.

My attention was called to him one week later, on September 27th, when it was found he was unable to walk. He at that time was feeling quite nervous but experienced little or no pain except on moving the legs when the calf muscles were sore. The examination at that time revealed the following conditions: The hip muscles move the thigh quite freely, and the thigh muscles are fairly strong, but the muscles below the knees are weak, with total paralysis of the anterior tibial muscles on each side, allowing a typical condition of foot-drop. Posterior tibial muscles retain some strength, but are weak and sensitive to pressure. There is complete wrist-drop when the fingers are extended, but he is able to slightly extend the hand on the wrist when strength, and shoulder movements quite strong. There is decided wasting of the muscles below the knees and elbows, the fingers are flexed. The elbow movements are fair, but apparently none above. Knee-jerks are completely absent. No ankle clonus, but stroking the soles of the feet causes slight movement of the leg muscles, a condition of slight plantar hyperæsthesia. Cremasteric reflexes slight. Reflexes of trunk normal. No reflexes could be obtained around the wrist. Deep reflexes of both arms greatly exaggerated, but to an equal extent on both sides. He complains of numb sensations in the hands. Sense of touch as decided by the æsthesiometer, seemed to be perfectly maintained in hands and arms. Tactile sense was perverted in some portions of the feet and legs. Contact could be appreciated on nearly all parts of the feet, but the sense was delayed, and two points of the instrument were recognized as such only at abnormal distances. The lessened sensibility is more marked in the distal portions of the toes. On the inner side of each ankle and calf of the leg there are areas of complete anæsthesia. Temperature sense slightly blurred, but nearly normal except on posterior and inner tibial region, where cool substances are felt as intensely cold, and warm substances, at times, are not felt at all, or are spoken of as cold or warm indifferently. In some spots cold substances give rise to no sensation at all. Pressure and muscular senses normal. The trunk and upper portions of the limbs are unaffected. He was placed in bed, with his body carefully protected from exposure and draft, and was given daily warm baths. The temperature of the water was about 100°, and he has been allowed to remain in the bath from twenty to thirty minutes. The distal portions of the limbs have been kept wrapped in flannels, and he has been given, internally, strychnine. There have been no complications. To-day he states that he is better; but we will examine him again and compare his condition with that found one week ago. You will observe that he is totally unable to bear his weight on his legs. There is complete foot-drop. Movements of the feet give him considerable pain, especially in the calves of the legs. The knee-jerks are conspicuous by their absence. Nearly every test to-day shows about the same symptoms elicited a week ago, with the exception that the muscular atrophy is greater; the areas of anæsthesia on the legs and feet have increased; that there is greater muscular weakness in the legs below the knees; that paralysis is becoming more complete below the elbows, and that pain to a slight extent is felt in forearms. Plantar and palmar hyperæsthesia is but slight. Bowels and bladder in our patient have been unaffected throughout. The kidneys, liver lungs, and heart are uninvolved.

Let us now endeavor to analyze the symptons presented by this case, and see if we can by a process of exclusion arrive at a satisfactory diagnosis. In the first place, the bilateral symptoms and the peculiar distribution of the paralysis and the disturbances in sensation would enable us at once to exclude brain lesions from taking any part in the production of the symptoms. There is a lesion of the spinal cord known as poliomyelitis anterior acuta, commonly known as infantile paralysis, that presents many symptoms similar to the case we are investigating. In it there is paralysis, most marked as a rule at the distal portions of the extremities, but even here one or more fingers of a hand may partially escape. It may come on gradually or suddenly, and is frequently attended by slight rheumatoid pain, especially in the joints at the beginning of the disease; but this disease when uncomplicated by inflammation of the spinal nerves is never attended with any sensory disturbances, especially such as we find here on the calves of the legs and inner sides of the ankles. Besides, in infantile paralysis the muscular affection is rarely symmetrical, one group of muscles in one leg being most affected and an entirely different group in the other leg, presenting a curious kind of paralysis. The deltoid muscles frequently present great weakness, with rapid wasting in cases whose forearm muscles may not be paralyzed. It is rare, also, in infantile paralysis to have a typical wrist- and foot-drop, unless the flexors are also paralyzed. We can then, I think, exclude this form of spinal trouble.

Spinal pachymeningitis is attended by paralysis and sensory disturbances, but in these the symptoms are not limited to the distal portions of the extremities, and the legs and arms are not affected alike. If the disease attacks the membranes in the dorsal region or at the lower portion of the cord, the arms entirely escape, whereas the trunk muscles and legs are involved. If the affection is sufficient to involve the arms, the brachial and cervical plexuses are the seat of the pain, the legs presenting no symptoms until the cord is pressed upon, when they become weak or paralyzed; but even then they are not the seat of pain as a rule. I think we are able to exclude this disease.

There is some danger of confounding acute ascending paralysis with the disease before us, but a knowledge of the principal symptoms and their mode of onset characterizing this curious spinal affection is sufficient to remove all difficulty in the diagnosis. There are little or no sensory disturbances. The paralysis begins in the feet and lower portions of the legs and gradually extends upward, the thigh muscles being affected before the trunk, and the trunk before the arms. These symptoms are totally different from what we have before us, and this disease can also be excluded.

Posterior spinal sclerosis, especially in its more irregular form, might be taken for the disease from which this man is suffering. More especially so in this case, as our patient has presented symptoms from time to time, extending over a period of three years. Ataxia is a prominent symptom in this disease as well as in the patient before us, but posterior spinal sclerosis is unattended with foot- and wrist-drop, marked muscular wasting or reactions of degeneration found in our patient. This form of spinal trouble can then, be excluded in the diagnosis, and in reality it is only when it is complicated with involvement of the spinal nerves that much difficulty in the diagnosis is encountered. Our patient was admitted for rheumatism, and treated for several days for this before paralysis was observed, when he was turned over to me to determine the character of the paralysis. It only needs careful examination in these cases to distinguish them from acute rheumatism. The paralysis, especially foot- and wrist-drop, sensory disturbances, especially pain over the nerves, and the whole affection being limited to the distal portions of the extremities, enable one without further difficulty, to exclude rheumatism. By the process of exclusion we have been able to exclude the brain and cord from being the seat of the lesion, and after excluding rheumatism, we only have left neuritis affecting many nerves, known as multiple neuritis.

The prognosis in the present case would be exceedingly favorable, as it is in the majority of cases of multiple neuritis, when neither the respiration, heart's action, nor the cranial nerves are involved, were it not that the man's habits of alcholic indulgence should make us fearful of cerebral changes in the course of the disease. The disease is always grave when the intercostal, the phrenic-pneumogastric, hypoglossal or glosso-pharyngeal nerves are involved. Lung, heart, liver, or kidney affection increases the gravity of the prognosis. Psychical symptoms in alcoholic cases are the rule, especially when the disease is severe and denotes more or less brain degeneration. Three weeks subsequently the psychical manifestations so common in alcoholic neuritis developed, and the patient failed mentally and physically, and died Nov. 27, about ten weeks after the beginning of his last illness. The autopsy revealed no apparent changes in the spinal cord. The cord and nerves are hardening for microscopical examination. In the average acute cases the disease progresses up to the end of the fourth or fifth week, remains stationary for two or three weeks, and then gradually regresses, the latter stage lasting three or four months longer. Some cases have a shorter duration, others a very much longer one. The objective sensory disturbances first disappear followed by gradual return of motor power; but complete muscular strength may not be regained for six or twelve months. Sometimes more or less subjective sensory disturbances, especially numbness, and hyperæsthesia, are present long after the objective sensory symptoms have disappeared.

In the way of treatment, absolute rest in bed is of the first importance. The body must be protected from changes of temperature by flannels worn next the skin. These should be changed daily. If the patient is not too helpless, and if the pain and soreness in the limbs are not too great, he should have a daily warm bath at a temperature of 90° to 100°, in which he should be allowed to remain from fifteen to thirty minutes, according to the strength of the patient; but great care should be taken that the body is not allowed to be chilled and that he is not permitted to make any effort in going to and from the bath. A gentle perspiration may be kept up for several hours by wrapping the patient in a blanket after each bath. Where the pain is great in the legs and arms, hot poultices or fomentations are very grateful and sometimes do good. The bowels should be kept regular. An occasional diaphoretic should be given, and strict attention should be paid to the nourishment of the patient. The diet should be nourishing, easily digested, but not stimulating, during the acute stage. It is absolutely necessary in alcoholic cases to abstain from stimulants throughout the course of the disease. But little in the way of direct medication can be done during the acute stage of the disease. In the rheumatic form of multiple neuritis, however, sodium salicylate is of advantage from the first. After the acute stage is over, strychnine and arsenic are the most reliable agents, and these can be used in connection with iron and quinine if necessary. Electricity and massage should not be used, as a rule, until after the acute stage is over. In cases attended with considerable muscular degeneration, galvanism is to be preferred, applying a continuous or interrupted current, as the objects to be accomplished demand. When muscular wasting is not great, ready response may be gotten to the faradic current, when faradism meets all the requirements. Massage, after muscular pains lessen, is attended with good results. It may be used from the first in subacute cases.

TABES AND HYSTERIA IN THE MALE.

Dr. Siredey, according to the France Médicale, November 13, 1891, records the history of a locomotor ataxic in whom hysteria revealed itself by a sign almost pathognomonic, namely, glosso-labial hemispasm. Electricity and suggestion combined made it possible for the patient to move the tongue as directed, in from one to two minutes. Glosso-labial hemispasm possesses distinct value as a symptom of hysteria, and upon it alone Dr. Babinsky based the diagnosis in this case. L. F. B.

PHENOCOLL HYDROCHLORATE.

By ISAAC OTT, M.D.

THIS body is a white crystalline powder, soluble in sixteen parts of water at 62° F. It is the hydrochlorate salt of amido-acet-para-phenetidin. This new combination is a phenacetin rendered soluble by the addition of an amido group. Alkalies and alkaline carbonates throw down from the hydrochlorate solution the pure base, phenocoll.

The pure base is soluble in hot water, but dissolves to only a small extent in cold water.

Boiling phenocoll for a long time with alkalies causes this body to split up into phenetidin and glycocoll.

Lately, through the kindness of Messrs. Lehn and Fink, I have received a sample of the above described body.

GENERAL ACTION.—*Exp. 1.*—Frog; received at 11.45 A.M., two grains of phenocoll, subcutaneously; 11.54 A.M., does not respond to irritants as quickly as formerly; sluggish in movement; 11.20 A.M., does not react to any irritation; lies with feet extended; 1.30 P.M., heart arrested in diastole; motor nerves respond to faradic current.

Exp. 2.—Large frog; received at 1.48 P.M., two grains of phenocoll, subcutaneously; 2.05 P.M., seems more active than previous to medication; 2.40 P.M., no sign of feebleness in movement; 3.30 P.M., very sluggish in his movements; 5.44 P.M., lies prostrate, but has fair reflexes in posterior extremities; next morning is nearly completely paralyzed; no reflexes; at mid-day of the second day has recovered sufficiently to hop about; 5.30 P.M. of the same day is still nearly paralyzed; in same condition at 9 P.M.; on third day, at 8.15, all reflexes lost, except the eyelid reflex; died during the day.

Exp. 3.—Rabbit; at 4.25 P.M. received 7 grains of phenocoll, subcutaneously; 4.30 P.M., breathes more rapidly; 4.35 P.M., received 10 grains subcutaneously; 4.45

P.M., cyanosis of ears; weakness in posterior extremities; 5 P.M., remains quiet, but can hop about; 9.30 P.M., has fully recovered.

The drug causes in frogs sluggish movements, loss of general reflexes and arrest of heart in diastole.

Upon rabbits subcutaneously it causes quietude, cyanosis of the ears and weakness in posterior extremities. By the jugular it causes in large doses arrest of the heart.

SENSORY NERVES.—*Exp. 4.*—Frog; had left artery and vein ligated; 3.26 P.M., 1 grain of phenocoll, subcutaneously; 3.27 P.M., hops about; 3.34 P.M., quite lively; no differences in the reflexes of the posterior extremities; 3.35 P.M., 1 grain of phenocoll, subcutaneously; 4.07 P.M., sulphuric acid applied to either posterior extremity caused no reflex action.

In the preceding experiment it was demonstrated that the motor nerves respond to electrical current. Hence, loss of the reflexes must be due to the paralysis of sensory nerve endings or the spinal cord. By the ligature the poison is prevented from reaching the end of the sensory nerves. Hence, the loss of reflex activity is due to an action upon the spinal cord.

EXPERIMENT V.—RABBIT; ACTION UPON THE CIRCULATION.

A. M.	Pulse per 15 sec.	Pressure.	Resp. for 15 sec.
11.44	72	120	40
11.45.15 1-4 gr. phenocoll per jugular.			
11.45.30	68	118	36
11.45.45	67	118	28
11.46. 1-4 gr. phenocoll.			
11.46.15	66	118	32
11.47	63	116	32
11.51	66	112	32
12.10	64	100	28
12.11	36	98	20

EXPERIMENT VI.—RABBIT.

M.	Pulse.	Pressure.
12	58	86
12.00 15. 1-8 gr. phenocoll by jugular.		
12.00.30	63	70
12.00.45	55	90
12.01	53	80

EXPERIMENT VI., *continued.*

M.	Pulse.	Pressure.
12.02.15	54	74
12.02.30. 1-4 gr. phenocoll.		
12.02.45	55	60
12.03	51	74
12.04	53	72
12.05	55	72
12.10	55	72
12.10.15. 1-2 gr. phenocoll.		
12.10.30	55	60
12.20	58	66
12.20.15 1-2 gr. phenocoll, cardial arrest for 5 seconds	38	60
12.21	53	70
12.51	60	70

The action of phenocoll upon the circulation is one of depression. The pulse and arterial pressure fall after a dose by the jugular.

To determine if this reduction was due to irritation of the cardio-inhibitory apparatus, a small dose of atropin was given by the jugular to paralyze the peripheral endings of the pneumogastric.

EXPERIMENT VII.—RABBIT.

Vagi paralyzed by a small dose of atropin.

P. M.	Pulse.	Pressure.
4	57	70
4.00.15. 1 gr. of phenocoll by the jugular	56	19
4.00.30	50	40
4.01.30	54	60
4.02.30	59	60
4.03	60	60
4.13	65	64

This experiment demonstrates that the reduction of the pulse is not due to an excitation of the pneumogastric, but that the cause must reside in the heart itself.

To determine the effect upon the vasomotor system, the spinal cord was divided at the level of the atlas and all the cardiac nerves in the neck.

EXPERIMENT VIII.—RABBIT.

All the cardiac nerves in the neck cut. Spinal cord cut at atlas.

P. M.		Pulse.	Pressure.
4		61	40
4.00.15.	1.4 gr. phenocoll per jugular.		
4.08.30		53	36
4.00.45		51	35
4.01		51	32
4.01.15		51	32
4.01.30.	1-4 gr. phenocoll per jugular.		
4.02.30		49	28
4.02.45	1-2 gr. phenocoll per jugular.		
4.03.45		45	28
4.05		43	28
4.08		44	26
4.13		44	14
4.15.	1 gr. phenocoll per jugular ; arrest of the heart for a minute		10
4 18		38	28

As is seen, the blood pressure falls just as rapidly without the main vasomotor centre being attached. It is reasonable to infer that weakness of the heart itself is one of the principal factors in the depression of arterial tension.

EXPERIMENT IX.—RABBIT ; RESPIRATION.

P. M.		Resp. for 15 seconds.
1		30
1.00.15.	1-8 gr. phenocoll per jugular.	
1.01		41
1.02		40
1.03		46
1.04		35
1.05		18
1.06		14
1.08		23
1.09		27
1.09.30.	1-4 gr. phenocoll per jugular.	
1.10		25
1.04		15
1.05.	1-8 gr. phenocoll per jugular.	
1.06		15
1.08		14
1.09.	1-2 gr. phenocoll per jugular.	13
1.11		15
1.13.	2 grains phenocoll per jugular.	
1.18		15

EXPERIMENT IX., *continued.*

P.M.		Resp. for 15 seconds.
1.19.	1 grain phenocoll per jugular.	
1.21		34
1.21.15.	2 grains phenocoll per jugular.	
1.23		38
1.24		56
1.25.	5 grains phenocoll per jugular.	
1.26		44
1.28.	Respiration arrested ; heart beating feebly.	

Eleven grains of phenocoll, per jugular, killed the animal.

EXPERIMENT X.—RABBIT ; VAGI DIVIDED.

P. M.		Resp. for 15 seconds.
1		13
1.00.15.	1·4 gr. phenocoll per jugular	30
1.01		16
1.04		16
1.11		17
1.15		23
1.15.15.	1 4 gr. phenocoll.	
1.16		20
1.17		29
1.17.	1-2 gr. phenocoll.	
1.18		20
1.20		18
1.20.15.	1 gr. phenocoll.	26
1.21.	Animal dead ; heart beating	

Two and a half grains of phenocoll killed the animal.

EXPERIMENT XI.—RABBIT ; VAGI DIVIDED.

P. M.		Resp. for 15 seconds.
4.30		18
4.33.	1 gr. of phenocoll per jugular.	
4.35		18
4.37		20
4.42		24
4.45		24
4.47.	1 gr. of phenocoll per jugular	26
4.48		26
4.55		32
5		32

Phenocoll first increases the respiratory movements and then reduces them. Previous division of the vagi does not change the state of affairs.

EXPERIMENT XII.—RABBIT ; TEMPERATURE.

A. M.		Temperature.
9.26		103.1
9.27.	1 gr. of phenocoll, subcutaneously.	
9.38.	Ears bluish	102.8
9.48		102.7
10.30		102.5
11 15		102.9
11.17.	2 grains of phenocoll.	
11.35		102.8
11.58		102 2
12.50		102.2
1.30.	Ears cyanosed	103

As is seen, it temporarily reduces the temperature of the body.

Phenocoll is a drug which may be recommended in the pains of influenza, rheumatism and gout. In the neuralgias of the intercostal or other peripheral nerves it will be found valuable. As an antipyretic its action is not of long endurance.

Unlike phenacetin, it is soluble in water and probably quite as effective for the subjugation of pain.

For the reduction of fever phenacetin is superior.

INCENDIARISM COMMITTED THROUGH HYPNOTIC INFLUENCE.

In the "Bulletin Général de Thérapeutique" for Aug. 30, 1891, Professor Aúguste Voisin describes an interesting case of a young woman who, under an hypnotic suggestion, committed acts of a criminal character, thus fortifying the position taken by the Nancy school in the famous Eyraud trial as against the school of the Salpêtrière. The conclusions arrived at by Professor Voisin are: That the individual may, under the influence of an hypnotic suggestion, commit a criminal act. Secondly, that the judge possesses, in this same hypnotism, the means of recognizing the true criminal. He can distinguish between the evil spirit who incites the crime and the innocent hand which enacts the deed.

W. C. K.

A CASE OF COMPLETE ATHETOSIS WITH POST-MORTEM.[1]

By JAMES WRIGHT PUTNAM, M.D.,

Professor of Nervous Diseases in University of Buffalo.

IN the spring of 1890, J. B., female, aged twelve, was brought to my office for continuous pain in the stomach, and a spasmodic disorder of twelve years' duration.

Family history.—The father has symptoms of spinal-cord disease; the mother is healthy. She has one older brother healthy.

Personal antecedents.—The patient was born at seven months. Eighteen months after birth, the mother noticed that its arms and legs moved peculiarly. After a few months she observed that the movements ceased only in sleep.

She was never able to control her muscles sufficiently to be able to stand or to use her hands. After she was three years of age the head began to be drawn backward. The child has been able to understand speech ever since it was two years old, but has never been able to speak. She would make certain sounds intelligible to the parents but not to a stranger. She pronounced some few words.

Personal appearance of the patient.—The child was extremely emaciated. The face was distorted by spasms, and the head drawn backward. The arms were in slow, continuous irregular motion. The fingers had the characteristic athetoid movements.

The spine was arched, the convexity looking forward.

The lower extremities were in continuous motion; at times they were quiet, while in a rigid tonic spasm of the extensor groups.

Every voluntary muscle in the body was involved. The sphincters were under normal control.

Smelling, hearing, vision, and taste all normally developed. Cutaneous sensibility normal.

As it was a hopeless case it was determined to keep the little one free from suffering at all hazards. Accordingly chloranodyne was prescribed in sufficient doses to keep her free from pain. This was given her with increasing quantities of morphine until August, 1891. The movements had by that time increased to such an extent that there was gain in many of the muscles. The head was so retracted that the occiput rested between the shoulders.

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[1] Presented to the American Neurological Association, September 22d, 23d, 24th, 1891.

The accompanying photographs taken at this time do not show accurately the extreme distortion. For the last two weeks of her life she was given chloroform almost continuously.

She died September 5th, aged thirteen years, six months, and twenty-five days.

Autopsy: September 6th by Dr. Rochester and myself.

Body extremely emaciated; weight about fifty pounds. The right arms were firmly fixed at the shoulder. The biceps were strongly contracted. The right thigh was crossed over the left. It had been in that position for several weeks. Ordinary force failed to straighten the leg.

Heart very small, otherwise normal lungs; pinkish and normal; liver normal; kidneys small, capsule adherent; suprarenal capsule large; intestines normal; stomach small; thickened pylorus, chronic catarrh; uterus very small; ovaries well developed.

The skull was sawn through. The bones were hard and of average thickness. The dura was thicker than usual, not adherent to the skull. The pia was much congested and very adherent to the cortex, it being impossible to peel it off without taking off the outer cortical layer with it. The brain was carefully removed and put in alcohol, where it was left until September 9th, when it was examined by Dr. Krauss and myself. We found the brain of normal size and symmetrical. On separating the two hemispheres no corpus callosum was to be seen, and the floor of the third ventricle was brought into view.

A closer examination showed that there was a narrow strip of white substance running along each side of the lateral ventricles. The strips were united at the anterior commissure by a narrow bridge of white substance.

Examination of the base of the brain.—On the left side the temporal lobe was retracted, and left the lenticular nucleus, which was very much softened, completely uncovered. The choroid plexus was pushed below it. The left crus was completely degenerated, and almost separated from the internal capsule. It was cheesy in appearance, and presented ragged uneven edges. It was firm to the touch, and more or less nodular.

In the apex of the left temporal lobe was an old abscess cavity of an estimated capacity of one ounce.

The right temporal lobe was not retracted. It contained a small and old abscess cavity of the capacity of one drachm.

The right crus was intact, but was constricted, and in places softened. The external surface over the abscesses was depressed.

This case is the fourteenth recorded case with autopsy. It is also the third case of complete athetosis with autopsy, a fourth case was reported by Prof. Osler at the last meeting of the association. Like most of the others the lenticular nucleus was involved and there were several spots of softening in it. The very remarkable separation of the corpus callosum can be accepted as a correct observation. It is just possible that the separation of the two hemispheres, which was done with great care, may have torn it—an accident which I have never seen occur. The probability that this was not torn is strengthened by the fact that the white substance on each side had clean, smooth edges.

The results of this autopsy tend toconfirm the view that athetosis is a pathological entity.

GENIUS, A DEGENERATIVE EPILEPTOID PSYCHOSIS.

A wild paper with this title appears in Alienist and Neurologist, July, 1891, "done into English" by James G. Kiernan, M.D., from the Italian of Cæsar Lombroso. The suspicion that genius has a degenerative origin the author thinks grows more and more into proof. A nearer inspection of the phenomena that genius exhibits brings to light vagaries and methods not common to ordinary men. The eccentricities of Rousseau, Lenau, Tasso, Swift, Poe, Hoffman, etc., are cited to corroborate Lombroso's theory, which really, when boiled down, means nothing more nor less than the co-existence of remarkable second-class genius and insanity. These men attained literary excellence, not because they were mentally unsound, but in spite of that fact. As Dr. Kiernan says: "Genius is not a product of morbid mind. In the exceptional case where the two (genius and insanity) co-exist, genius is evidence of a healthy, conservative element, struggling with the incubus of disease." L. F. B.

Neurological Digest.

CURRENT ANATOMY, PHYSIOLOGY AND PATHOLOGICAL ANATOMY OF THE NERVOUS SYSTEM.

BY JOSEPH COLLINS, M.D.

A CASE OF SUBCORTICAL ALEXIA (WERNICKE).

Dr. O. Berkham (Archiv. f. Psych. u. Nervenkrank., vol. xxiii., p. 558). The case related is that of a fifty-year-old baker who manifested peculiar symptoms after sitting in his bake-room for about three hours with the stove-flue closed. At the end of this time, when he came out of the room, his wife noticed that he was dizzy and spoke very peculiarly, so that she could not understand a syllable. The next day she noticed that although he could walk well the disturbance of speech remained as before, and he did all sorts of foolish and meaningless acts, such as picking up glowing coal with the fingers, closing and opening a door, etc. On examination the patient was a middle-sized man of apparently good nutrition, but very pale ; no paralysis of the eye, tongue or other muscles ; patellar reflex present and normal ; muscular power preserved ; no disturbance of sensation, hearing, taste or smell. A history of previous disturbance of speech or syphilitic infection could not be obtained ; heart and large vessels seemed normal; responded to simple questions not at all, or irrelevantly and hardly comprehensible; called familiar objects by wrong names; could count up to nineteen, then stop ; could not read, and of single letters he could only tell some of the vowels correctly. In writing, his letters were very obscure ; of dictated spontaneous and copied letters they were in order of excellence—the first showed the best and the last most undecipherable.

Examination of the eyes.—The right eye gave evidence of previous corneal disease. In the left eye he had very good vision, but slight hypermetropia. A peculiar shrinkage of the field of vision was manifest in the upper and nasal portion ; in the under portion the field of vision was normal. Pupils' reaction to accommodation somewhat disturbed ; react well to light. The intelligence was somewhat disturbed; but it was impossible to say in this patient to what degree it had progressed. He was able to go about alone and do various complicated acts. Seven months after the symptoms first presented themselves, the patient developed pulmonary œdema and died, although the lungs and heart had been examined the previous day and no sinister manifestations discovered, and all that he complained of was pain in the back, and the urine showed slight traces of albumen. On post-mortem the skull was moderately thick, symmetrical, sutures well united, the dura on the left side united to the skull and thickened in the middle line, and the sinuses filled with blood. The pia mater was easily stripped off, and the convolutions large. The left lobus angularis showed a sunken spot about the size of a hazel-nut, which, when opened, was shown to contain a pultaceous, degenerated-looking fluid, and when empty the cavity measured 1½ cm. wide and 2½ cm. long, and involved the cortex and white substance, the floor being hard and uneven. The corpus striatus, optic thalamus and corpora quadrigemina were apparently normal. Right hemisphere normal; ventricles not enlarged, but evidences of ependymitis.

After hardening in Müller's fluid and alcohol, pieces of the brain tissue removed from the softened area showed clearly the sinking in and softening, and over this spot the pia was greatly thickened, and this thickening was also manifest where the pia dipped down between this and a neighboring healthy gyri. The white substance beneath the thickened pia, in a limited area, seemed very brittle. Around the area of softening the medullated fibres seemed to be normal, but in the cortex itself they were perhaps somewhat decreased in size. In a gyrus situated beneath that portion of the pia which was most inflamed, there was found a sudden cessation in the course of the medullated fibres, and the place which their course should occupy was filled with a granular, degenerated product, and around this the small blood-vessels were greatly increased in number. Beneath this area of granular tissue were found several openings or chasms, and around these in a rectiform space, a softening of the glia and an infiltration, with leucocytes. These small areas were confluent with the softened area, or impinged into the normal medullary substance.

In the ramifications of the artery of Sylvius' fissure and the circle of Willis, evidences of endarteritis, in the shape of thickening and degeneration of the tunica interna, were found, and in one place this thickening was so great as to obliterate the lumen of the blood-vessels. In the places where the endarteritis was severest, numerous thrombi were found in a state of organization.

The kindeys were found in an advanced stage of cystic degeneration.

Periscope.

EXCERPTS WILL BE FURNISHED AS FOLLOWS:

From the Hollandish, Swedish, Danish, Norwegian, German, Portuguese, Roumanian, Spanish, and Italian:
F. H. PRITCHARD, M.D., Norwalk, O.

From the Swedish, Danish, Norwegian and Finnish:
FREDERICK PETERSON, M.D., New York.

From the German:
WILLIAM M. LESZYNSKY, M.D., New York.
BELLE MACDONALD, M.D., New York

From the French:
L. FISKE BRYSON, M.D., New York.
G. M. HAMMOND, M.D., New York.

From the French, German and Italian:
JOHN WINTERS BRANNAN, M.D., New York.

From the Italian and Spanish:
WILLIAM C. KRAUSS, M.D., Buffalo, N. Y.

From the Italian and French:
E. P. HURD, M.D., Newburyport, Mass.

From the German, Italian, French and Russian:
ALBERT PICK, M.D., Boston, Mass.

From the English and American:
A. FREEMAN, M.D., New York.

From the French and German:
W. F. ROBINSON, M.D., Albany.

The Editor will not accept as ORIGINAL ARTICLES and CLINICAL CASES those that have appeared elsewhere.

Authors are requested to make none but typographical corrections on the proof sent to them. The manuscript must represent the final form in which the article is to be printed.

PATHOLOGICAL.

VISUAL DISTURBANCES RESULTING FROM BRAIN TUMOR.

In the "Neurologisches Centralblatt," No. 15, 1891, Hirschberg describes several symptoms heretofore unobserved or imperfectly noted, and lays great stress on the fact that the visual defects occur quite often before the local symptoms, and in conjunction with the intracranial pressure, as manifested in bilateral choked disc, constitute essential symptoms of the fundamental disease.

He describes three forms of visual disturbances:

1. Sudden and transient blindness (epileptic amaurosis) as a usual concomitant of brain tumor. It lasts about two minutes; recurs six to eight times a day, or oftener, and owing to its frequency is extremely tiresome to the patient. Occasionally the attack lasts a half hour or for several hours.

2. Permanent defects due to changes in the brain substance. (*a*). Homonymous hemianopsia affecting both eyes, from destruction of one or both visual centres in the occipital lobes, or of the optic radiations, or of the cranial nerves. Rarely, partial hemianopsia, where only a portion of the visual centre is affected. (*b*). Crossed temporal hemianopsia that leads to complete blindness, from a growth in the anterior or posterior optic chiasm.

3. Permanent visual defects originating in the eye itself. (*a*). Enlargement of the blind spot in consequence of papillitis. (*b*). Contraction of the visual field occurring suddenly in one of the principal meridians of either eye, and in its further course distributing itself irregularly. (H. ascribes this to a sudden cutting off of the blood supply to the peripheral retinal arteries). (*c*). Diminution of central vision from anatomical changes at the macula (small hæmorrhages, exudations or detachments), or greater loss of central vision from interruption of nerve fibres entering the macula. In the course of the disease the perceptions of form and color are lost, the perception of light persisting longer and finally ending in total blindness. W. M. L.

THE RESULT OF THE RELIEF FROM PRESSURE IN AFFECTIONS OF THE FUNCTIONS OF THE CORD, OCCASIONED BY VERTEBRAL CARIES.

M. Meyer (Inaug. Dissert. Berlin, 1890) draws the following conclusions as to the prognosis in the disturbances of spinal function in tuberculous spondylitis :

1. If the paralysis in vertebral caries is due only to the compression, recovery is possible on cessation of the pressure and cure or improvement in the bone disease, even if there be no distinct evidence to prove that the pressure has been removed.

2. Should a transverse myelitis be the cause of the disturbance of function, recovery is impossible, according to the views of the experimenters ; while in the opinion of clinicians a cure is possible, under favorable circumstances, even after a long time.

The case upon which the writer bases his observations was that of a young man who fell and struck the back of his neck two months before. After exposure to cold, he at once complained of pain and paræsthesia in the lower extremities, and pain in the chest upon movement of the upper cervical vertebræ.

On admission to the hospital, there was paralysis of the left peronæus, flaccid paralysis of the legs, numbness, high fever and severe pain on movement. The spinous processes of the fifth to the seventh dorsal vertebræ were prominent. Retention of urine; paralysis of rectal sphincters; loss of the skin and tendon reflexes. There was developed gradually a fluctuating tumor adjoining the vertebral column. Pressure over the abscess produced pain which radiated into the legs, together with thoracic pain and dyspnœa. The abscess suddenly ruptured into the lung and was thus evacuated. Relief from the acute symptoms was at once apparent. The paralysis remained. Incontinence of urine took place and the tumor gradually disappeared. Tactile and pain senses returned. The function of the bladder and rectum improved. The symptoms of motor irritation, spasms of the legs, etc., slowly subsided. From the 17th of April to the 2d of October, patient received fifty-two injections of curare (0.0025). The movements of the legs improved and the ataxia and the rigidity disappeared. The reflex activity returned. The bone disease was completely cured. (Centralbl. f. klin. Med., No. 45, 1891). W. M. L.

HEREDITY IN SPINAL CORD DISEASE.

In the Union Médicale Dr. Latil has reported cases in two families that illustrate in a remarkable manner the transmission of predisposition to spinal-cord disease. In one family he had followed the history and seen the development in all its cardinal points of Friedreich's ataxia in four generations of one family. As observed by Mendel in one case, its earliest manifestation has been unsteady chirography from childhood. There were eight victims in all, chiefly in the eldest branch of the family—five men and three women. Associated with Friedreich's disease among these afflicted members of one family was one case of diabetes, one of melancholia, and one of hysteria with astasia-abasia. Transverse myelitis with paraplegia the author had observed in seven persons in three generations in another family, always among eldest children and appearing between the ages of eighteen and forty. The condition remained permanent; there was paraplegia more or less complete, anæsthesia and abolition of knee-jerk. In the grandson and grandfather the disease was exactly similar in all its manifestations, and appeared to be in no way influenced by the intervening characteristics of other blood.

L. F. B.

CEREBRAL IRRITATION.

According to the Journal de Médicine et de Chirurgie, November 10, 1891, Dr. Jules Simon lays great stress upon a condition in children that he calls cerebral irritation. There is an overactivity of mind, a too ready response to external stimuli. No organic lesion exists, the faculties are seemingly normal, yet the child is unable to make use of his intellectual powers. Sometimes cerebral irritation appears in infancy, and thus special care is necessary to ward off possible epilepsy or cerebral sclerosis. These children often recover when heredity is good. Syphilis or tuberculosis in parents, or alcoholism, gives the child attacked with cerebral irritation scarcely a chance of recovery. The only favorable prognosis is when the cause can be considered accidental. Children thus afflicted are generally sad, somewhat melancholy even, of such mental unsteadiness that it is impossible for them to follow the simplest ideas. They are cruel to animals and later in life sometimes become incendiaries. They have no judgment because they have no memory. The organs of special sense are particularly sensitive. Bright objects attract, rhythm of certain kinds will quiet them, they have some idea of music and figures when these make no special demand upon the reasoning faculties. The mood is capricious in the extreme, caresses and severity are equally inefficacious to avert or break up crises to which these patients are subject. The majority of these children have epileptoid attacks. In those who are very young there are instead excitements and movements that are constant. Sometimes the crisis consists in a violent localized pain or in some impulsive movement. Such cases must be isolated, as perfect quiet is absolutely essential. Bromide of potassium in increasing doses, iodide of potassium, mercury and valerian are remedies that give good results. The bromide and iodide act well in alternation. In very young children it is wise to give bromide of potassium for three days only, allowing a brief period of repose before the next three days. Baths seem to exaggerate the anæsthesia of the skin. Without proper environment there is very little hope of cure. L. F. B.

ACUTE INFECTIOUS POLY-NEURITIS.

The Journal de Médicine et de Chirurgie, November 10, 1891, refers to Dr. Havage's published case of poly-neuritis.

It is to-day understood that paralysis following acute infectious disease is due to peripheral nerve disorder, rather than to some affection of the central nervous system, as was formerly supposed. There is also a primary polyneuritis, developing without antecedent infectious disease. The case in question was of this nature. The patient apparently had an attack of grippe. In a few days there was a sensation of heaviness in the hands and feet, in the lips and the tip of the tongue. There was rapid aggravation of the symptoms, a true paralysis of the arms, together with painful anæsthesia in the hands and feet. Imperfect digestion and albuminuria were also present, but no fever. A few days later there was difficulty of speech due to paralytic inertia of all the facial muscles. Some bulbar implication suggested itself, but the trouble became no worse, and finally disappeared after cauterization of the spine and injections of sulphate of strychnine. The patient recovered completely in about six weeks. The symptom of longest duration was a paralysis of one of the left eye-muscles.

L. F. B.

MULTIPLE NEURITIS.

In Médicin Moderne, November, 1891, there is an account of several cases presented by Dr. A. Frankell, who quotes Leyden to the effect that the central nervous system can take part in multiple neuritis. Recent investigations have demonstrated that not only the gray matter of the cord but the white substance also may be involved as in locomotor ataxia. Phal has shown that multiple neuritis is a toxic process involving different parts of the nervous system; and this makes correct diagnosis often difficult and sometimes impossible, for there are similar ataxic and neuritic symptoms in multiple neuritis and tabes. The neuritic manifestations of the latter disease have been carefully studied and noted by Déjerine, Jolly, and Goldscheider. The first history Dr. Frankel recounted was that of an alcoholic patient fifty years old, who presented, besides the usual symptoms of neuritis, well-marked amnesia. Psychic phenomena are rare in neuritis and must be classed among brain lesions. This patient's general condition was bad, there being considerable prostration, as in brain troubles generally. There was gradual sinking and death. The autopsy revealed a softening of the myeline of the peripheral nerves. and a normal spinal cord. The second patient was a dwarfish little fellow of fourteen, of extremely light weight, who, under the influence of proper food and exercise, nearly doubled his weight in less than twelve weeks. The movements of the legs were awkward, walking was difficult, and the left arm was completely paralyzed. There was such marked atrophy of the muscles as to suggest progressive muscular atrophy. In the third case, a coachman, there was tubercular neuritis with complete paralysis of the lower limbs, paresis in the arms, hoarseness due to paralysis of the vocal cords on the left side, and intense pains. Well-regulated diet caused all these symptoms to disappear, though the tubercular condition of the lungs remained the same. In the discussion which followed, Dr. Goldscheider remarked that implication of the cranial nerves was a rare thing in multiple neuritis; in one instance he had seen the motor oculi involved, and in another tachycardia, due to a lesion of the pneumogastric that was later followed by left-sided optic neuritis. Dr. Leyden then said that in his first work he had objected strongly to any dogmatic separation of peripheral nerves and the central system in their relations to multiple neuritis. A poisonous agent could simultaneously attack these two systems of nerves. According to his personal observation, anatomical lesions of the central system were found only in the ganglionic cells. There might also be disseminated lesions in the gray matter. Up to the present time he had found none in the white. Also, it seemed unwise to draw too deep lines of demarcation between nerve and muscle, for in this disease there might be primarily a myositis. The anatomical nerve lesions in multiple neuritis present some variety. There may be abundant proliferation of cells impinging upon nerve substance and upon the nerve sheath. Or degeneration of the nerve may occur and disappearance of myeline. This is the inflammatory form. Acute ascending paralysis should be classified as a multiple neuritis. The toxic agent first disturbs the function of the nerve, and this is followed by nerve degeneration. Whether multiple neuritis ever attacked the cord or not, Dr. Leyden was unable to state, never having encountered cases wherein tabes or myelitis had immediately followed this particular abnormity. Nevertheless, such a sequence was by no means an impossibility. L. F. B.

CHARACTERISTICS OF HYSTERICAL TREMOR.

Dr. Odds has studied the general characteristics of this condition, of which the following summary appears in the Union Médicale, October 21, 1891.

Cause.—From this point of view there are three distinct forms of hysterical tremor. First, hystero-emotional (41 cases out of 55), due to sudden shock, fear, and slow depressing emotions, whether complicated or not by psychic depression. Then there is hysterotoxic tremor, similar to the tremor following infectious disease. And there is also tremor due to hysterical attacks, to apoplectiform or epileptoid seizures.

Onset.—This is often classic in its method. There is a prodromal period after shock, in which there is constant headache and intellectual or psychic abnormity.

Quality of tremor when once established.—Its variability is marked. It is spontaneous and induced by any hysterical accident, as emotion, a convulsion, etc. It is paradoxical on account of anomalies due to the tremor itself and secondary hysterical symptoms that accompany it. L. F. B.

CLINICAL.

A CASE OF HEMIPLEGIA, FOLLOWED BY EARLY MUSCULAR ATROPHY.

In the "Neurologisches Centralblatt," No. 20, 1891, Dr. L. Darkchewitch reports a case of hemiplegia in which muscular atrophy appeared shortly after the paralysis. The patient was 43 years of age and without a history of alcoholism or syphilis. When first seen he was semi-conscious. Word-blindness and complete motor aphasia existed. There was also total right hemiplegia with involvement of the lower facial branches and the hypoglossal nerve. Sensation seemed to be deficient on the paralyzed side, and the tendon reflexes were somewhat exaggerated. Loss of control of bladder and rectum. The urine contained neither albumen nor sugar. Four weeks after the attack there was marked atrophy affecting the right deltoid, supra-spinatus, infra-spinatus and pectoralis major. The atrophy rapidly extended to the muscles of the forearm and the small muscles of the hand. The elecrical reactions were normal. About one month later death took place as a result of another cerebral lesion.

At the autopsy two spots of softening were found in the corpora striata, one on either side, thus accounting for the hemiplegia.

A careful microscopical examination was made of the brain, the spinal cord, the spinal nerve roots, the peripheral nerve trunks of the right arm and right leg and the muscles of all four extremities.

There was secondary degeneration of the corresponding pyramidal tract, but no evidence whatsoever of implication of the ganglion cells in the anterior horn or of the peripheral nerve roots. The muscles, however, were found to be in a condition of simple atrophy, due to the loss of trophic influence from the brain, or, in other words, cerebral amyotrophy. W. M. L.

SARCOMA OF THE CORPUS CALLOSUM.

Dr. Ç. A. Oliver (British Med. Jour., July 11, 1891), relates the case of a woman who suffered from visual failure, followed by anosmia, perverted taste, illusions and hallucinations. She died comatose three years and a half from the commencement of the illness. A spindle-celled sarcoma sprang from the knee of the corpus callosum, separating the uncinate gyri and pressing on the temporal lobes. A. F.

VAGUS NEUROSIS.

Dr. Bremer (British Med. Jour., July 11, 1891) reports the case of a girl with neurotic ancestry, who four years after having measles suffered daily paroxysms of epigastric pain. This suddenly ceased, when her breathing became slow, 8 to 12 per minute, and laborious. Physical exertion caused great dyspnœa. After taking strychnine for a time, followed by quebracho for several months, the respirations became normal. A. F.

INSANITY IN TWINS.

Dr. Wm. Worcester (British Medical Journal, July 11, 1891) records a case of insanity occurring in twins at the same time, at about the age of 26. They had always been intellectually weak and both died of phthisis. A. F.

CRANIECTOMY IN MICROCEPHALY.

Victor Horsley (British Medical Journal, September 12, 1891) reports two cases in which the operation was performed, one being followed by marked improvement, the other ending fatally, from too extensive interference being made. His experience of but two cases will not justify any dogmatic statement, but from collation of published instances

he is convinced that it should be carried out in all cases, inasmuch as the condition is otherwise without hope, and interference has secured notable improvement. There are risks to be guarded against, but these can be avoided by limitation of the extent of the operation undertaken at the time.
A. F.

RETURN OF KNEE-JERKS AFTER HEMIPLEGIA IN A TABETIC.

J. Hughlings Jackson (British Medical Journal, July 11, 1891) reports the case of a man, aged 49, with syphilitic history, who had been tabetic about twelve years, when he was attacked twice with hemiplegia on the right side. Forty-seven days after the onset of the second attack the knee-jerk, which had previously been absent, returned on the right side. Afterwards it was noticed that on the left side it could also be elicited, but with difficulty. The hemiplegia was not considered to be a tabetic symptom. The author presumes that the return of the knee-jerk was contemporaneous with the establishment of sclerosis of fibres of the pyramidal tract in the bundle of deep fibres of the lateral column. Before the lateral sclerosis was well established, it may be that from the sclerosis of the posterior columns there were too few fibres left intact in those columns for strong enough impulses to act upon the anterior horns concerned, so as to produce the jerk. Upon the ensuing of lateral sclerosis, the anterior horns became more excitable. Thus it may be that, after this change in the horns, the few fibres left intact in the posterior columns were sufficient for action on the horns so that the jerk could be elicited. A. F.

RESPONSES TO THE ALTERNATING GALVANIC CURRENT IN NORMAL AND DEGENERATE MUSCLES.

A paper by M. A. Starr, M.D., and C. I. Young, A.B. (Am. Jour. of the Med. Sciences, Oct. 1891), contains the results of researches made by the latter upon the muscles of his own person. He shows that the length and duration of stimulus required to cause contraction in a paralyzed muscle varies in accordance with the degree of progress toward recovery; also with the subjective feeling of strength; and also in dependence upon the use of strychnine in interrupted or continuous doses. According to Dr. Starr, the practical result of this is to enable a physician by careful measurements to construct a prognostic curve which will enable him to give certain hope of recovery to a patient completely paralyzed, or will establish the unfortunate fact of a permanent loss of power. It also makes it evident that in using arsenic or strychnine as a stimulus to the spinal cord it is better to give the drug for short periods with intermissions than continuously. A. F.

POST-ECLAMPTIC AMNESIA.

In the Union Médicale, October 24, 1891, there is noted a case of this kind in the service of Dr. Bidon. The patient, twenty-eight years old, had several eclamptic seizures at the beginning of labor and others afterwards. The next day her marriage and everything connected with her recent personal history she had completely forgotten. Following eclampsia, isolated words, figures and the most recent events are not the only things that are completely lost to memory. Years may slip out of remembrance. L. F. B.

ABSCESS OF THE TEMPORAL LOBE.

The Languedoc Médicale, November 15, 1891, cites an interesting case reported by Dr. A. Babinsky. A child of five inserted a pea into the left ear, where it remained in spite of syringing until suppuration took place and its extraction thus became possible. Two or three weeks later fever and left-sided headache appeared, especially at night, with slow, irregular pulse, scaphoid retraction of the abdomen, and a slight degree of opisthotonus and drowsiness, these symptoms at first suggesting meningitis. When taken to the hospital there were no direct cerebral symptoms, no pupillary inequality, no difficulty in ocular movement. The facial nerve was not implicated ; mobility and sensation remained normal. A week later the left pupil began to contract, the pulse, always irregular, now marked sixty-four beats, and the general condition was highly unsatisfactory in spite of normal temperature. In a few days percussion revealed pain in the temporal region. Then the general condition varied for a while, followed by a notable aggravation of the symptoms, violent pains in the head, diminished pulse beat, apathy, delirium with outcries, and a tendency to somnolence. A diagnosis of abscess in the temporal lobe was then made, in spite of absence of paralysis of the arms and defects of hearing, symptoms considered pathognomonic by Bergmann. This diagnosis was held to firmly by the physician in charge, an autopsy in a case presenting a similar train of symptoms having verified such a conclusion. An operation for cerebral abscess was then performed in the region indicated, the abscess found (as it was supposed it would be) and evacuated. In two days the pulse was normal, and all pain had disappeared. The child was presented to the Medical Society of Berlin in October, completely cured. Osseous reunion was not yet complete, and the pulsations of the brain were distinctly visible. A few days after the operation slight facial paralysis supervened but soon disappeared. There were also some difficulties of speech, the child for a while repeating certain words and phrases eight or ten times in succession.

L. F. B.

HYSTERO-TRAUMATISM IMPROVED BY ELECTRICITY.

In the Journal de Bordeaux, October, 18, 1891, Dr. Matignon reports such a case. The man, thirty-four years old, received a poniard stab in the left breast, which later became the seat of a hysterogenetic zone. A tumor was at first suspected, but the swelling proved to be due to a contraction of the inferior fasciculi of the pectoralis major. There was monoplegia of the left arm, with characteristic anæsthesia. This paralysis lessened under electrical treatment, but the anæsthesia remained. L. F. B.

AGORAPHOBIA.

In the Gazette des Hôpitaux, October 6, 1891, an example of complete and characteristic agoraphobia is cited, in a patient without hysterical or neurasthenic stigmata. The father was tabetic and the patient had been the victim of many trials and adverse emotions, this one morbid symptom resulting from combination of the foregoing influences. L. F. B.

AN UNUSUAL SOURCE OF LEAD POISONING.

In the Journal de Médicine, November 26, 1891, Dr. Guyot reports the case of a young and robust subject in whom there was complete paralysis of the extensors. The only possible source of plumbism seemed to be the wall-paper of the large, airy room in which he slept. Analysis revealed large quantities of lead in the paper, and an unusual method of lead-poisoning.

SUPERIOR HOMONYMOUS HEMIANOPSIA.

In the Union Médicale, October 24, 1891, there is a case reported by Dr. Boè, in which there was loss of the upper half of both visual fields without diminished vision. There was also lessened sense of smell and decreased knee-jerk on one side. The patient had had syphilis five years before. One occipital lobe only might have been involved, and there might have existed some abnormal distribution of nerve fibres going to the retina. L. F. B.

THERAPEUTICAL.

TREATMENT OF EPILEPSY BY SODIUM BORATE.

In Le Progrès Médical, October 10, 1891. Professor Mairet, of Montpellier, after a thorough trial with this agent in many cases of epilepsy, comes to the following conclusions.

1. Borate of soda may be of great value in the treatment of epileptic attacks, checking, even suppressing them, for months.
2. Borate of soda succeeds better in idiopathic epilepsy than the bromide of potash.
3. The bromide of potash on the other hand is better adapted when with epilepsy there is associated some functional nervous disorder, and only after the potash salt has failed in these cases should one resort to the borate of soda. W. C. K.

ETHYLENE BROMIDE IN EPILEPSY.

Dr. Donath (British Medical Journal, July 11, 1891), believing the saline actions of ordinary bromides to be injurious in many cases of severe epilepsy, has made use of this liquid in ten patients, who were under observation long enough to give reliable results. The attacks became fewer, milder and of shorter duration; assuming the form of *petit mal*, or simply muscular twitchings, without loss of consciousness. He believes ethylene bromide is a good substitute for potassium bromide, and that the bromide and not the potassium is the active element. A. F.

PHYSIOLOGICAL.

THE EXPERIMENTAL EFFECT OF COLD UPON THE PERIPHERAL NERVES.

In the Riforma Med., 1889, G. Alonzo, who has studied the effects of a freezing mixture applied over the peripheral nerves, reports the results of his experiments. A portion of a rabbit's leg about one ctm. in diameter, corresponding with the exit of the posterior tibial nerve, was refrigerated by the ether spray for five minutes daily. After 18 to 20 applications the temperature fell to —10° C., within two minutes. After each application there was a temporary paresis of the extremity, its duration being proportioned to the number of preceding applications, until at last the paralysis was complete.

Subsequently a freezing mixture composed of snow and salt was used instead of the ether, and sometimes guinea pigs took the place of the rabbits. The nerves were examined after a single refrigeration, and also after a number ranging from two to thirty. The microscopical investigation was made by Ranvier's method after the preparation had been treated with hyperosmic acid and picrocarmine in glycerine. In general it was shown that a decided refrigeration of the skin produces gradually a series of marked changes in the subjacent nerve fibres. The most striking of these were the splitting up of the nerve and the invasion of leucocytes into the fibres, distortion of the axis cylinders and their separation into fragments and globules; altogether reminding one of the embryonic condition of the nerve fibres. The sheath of Schwann was not involved.

The above mentioned changes were most pronounced in the portion directly exposed to the cold, and in the peripheral nerve distribution. Their intensity was proportional to the duration of the cold and the number of the applications. The deeper the nerve lay under the skin the less marked were the changes. Upon the removal of the cause the degenerated nerves may undergo regeneration. (Centralb. f. klin. Med., No. 41, 1890). W. M. L.

Society Reports.

AMERICAN NEUROLOGICAL ASSOCIATION.

Meeting of September 23, 24, 25, 1891.

[Continued]

THE PATHOLOGY OF HYSTERICAL ANÆSTHESIA, ILLUSTRATED BY TWO CASES SHOWING SOME UNUSUAL PHENOMENA.

Dr. MORTON PRINCE, of Boston, read a paper on this subject.

The peculiarity of these cases was that notwithstanding the presence of deep anæsthesia it could be proved that the patient felt any impression given to the hand. Pinching and pricking the skin were not perceived, but when the subjects were hypnotized they could accurately describe the tests which had been applied to the anæsthetic parts, and of which they had not been conscious. This showed that the impression was felt but not perceived. The most probable explanation was that the middle sensory centres (of Hughlings Jackson) were normal, but that in hysterical anæsthesia there is an inhibition of the highest sensory centres where the impressions are coördinated with the other psychical states constituting consciousness.

TUMOR OF THE CEREBELLUM, IN WHICH TREPHINING WAS DONE FOR THE RELIEF OF PRESSURE. (See page 97.)

This was a joint communication by Drs. KNAPP and E. H. BRADFORD, of Boston.

JACKSONIAN EPILEPSY; TREPHINING; REMOVAL OF SMALL TUMOR AND EXCISION OF CORTEX.

This was a joint communication by Drs. W. W. KEEN and C. K. MILLS.

MEDICAL HISTORY BY DR. MILLS.

S. W., twenty-seven years old; height, five feet; weight, ninety-eight pounds; until the first symptoms of the spasmodic affection for which she applied for treatment had been in excellent health, with the exception of an attack of chronic otitis when she was a child, which had left her with a perforated membrana tympani and the occasional recurrence of a slight discharge. Ten years before coming under observation, while in a cold room in the northwest, she had for the first time a slight attack of left hemi-paræsthesia; her left hand, arm, and foot became numb and heavy. The sensation passed off in a few moments and was not accompanied by spasm or vertigo; but from this time, at intervals of weeks or months, she had attacks, usually slight, of the same character. Handling or unusual movements of the left arm would sometimes bring them on; at other times they would come without any apparent exciting cause. Between four and five years after the first of these sensory seizures, she had for the first time, as an accompaniment, a spasm involving both the left upper and lower extremity, but more marked in the former. From this time on she had at irregular, but more frequent intervals, these sensory and motor attacks, the spasm beginning on the left side, but after a time markedly attacking the right arm as well. The seizures increased in frequency, until after a few months she had them almost every day, and often six or seven during the twenty-four hours. The only time when she was free from them for a long period was in the spring of 1890, when, while suffering with a fever, she had no attacks for about three weeks. Although the attacks increased in severity and frequency, they had for many months remained much the same as they were when she first came under observation. She had been treated by various physicians, and on several occasions bromide treatment had been pushed, but always without any improvement, and usually she thought she grew worse under the use of drugs. She was sent to me for diagnosis and treatment by Dr. H. C. Yarrow, of Washington, D. C. Her general health, mental and physical, was good, and she had no evidence of paralysis.

Soon after coming under observation I had several opportunities of witnessing her seizures, and one description would answer for all, with the exception that sometimes her consciousness was more deeply affected than at others. She would feel a prickling sensation in her left arm, and would utter a plaintive cry. The left arm would immediately extend at the shoulder and elbow, and almost coincidently the left leg would become spastic in extension, and the head would be twisted to the right.

The right upper extremity would then be strongly flexed at the elbow, and the whole limb carried over the chest, as if the hand was grasping the region of the heart. The spasm continued for a few seconds, passing off with a laughing sound and facial expression. In the shortest attacks she did not appear to lose consciousness at all, and during the early weeks that she remained under observation she never seemed to be completely unconscious during the seizures, and could detail most of what was said and done by others during them. She sometimes complained of having pain in the precordial region. She repelled any touching or handling during the spells, and explained afterward that it hurt her and made her worse.

At first the case was regarded as probably one of hystero-epilepsy, and the patient was treated with tonics and gymnastics to improve her general and nervous health, but in spite of such treatment and the best of care her attacks grew more frequent and severe. About three months after coming under observation, an attack, which began in the usual manner, became extremely violent, and was attended with total unconsciousness. In November the patient began to have day and night as many as ten to fifteen serious attacks. After several consultations with Drs. Weir Mitchell, Keen, Sinkler and Lloyd, it was finally decided that an operation should be performed.

In deciding on a site for operation the history and character of the sensory and spasmodic attacks were carefully considered. The case had begun with sensory disturbance in the limbs of the left side, particularly in the upper extremity. The spasm had first affected this side, and usually, as near as could be determined, was initiated with a shoulder movement on this side, although the spasm diffused and extended so rapidly to all parts of the left arm and leg, and to the right upper extremity, that it was sometimes difficult to determine how it began. Sometimes, however, the right side escaped. On the left side the patient showed slight drooping and apparent weakness of the muscles about the mouth, although this was so little marked as to be scarcely more than is not infrequently present normally.

On the day preceding the operation Dr. Bassette examined the patient and made the following report of her condition: Pupils normal; slight drooping of the left upper lip, but otherwise the face normal; no paralysis of the limbs; no impairment of touch, sight, taste, or smell. Hearing much impaired on the left side. Dr. C. S. Turnbull had previously examined her ears, and reported a chronic otitis media with perforation, which required but little treatment, and which he thought had nothing to do with her brain symptoms. Knee-jerk was present; no ankle clonus. Heart and lungs were normal.

SURGICAL HISTORY AND REMARKS BY DR. KEEN.

On the day before the operation, December 10, 1890, the carpet was taken up, the walls wiped down, and the floor, wood-work, etc., were washed with a solution of carbolic acid, 1 to 40. The patient's head was shaved and carefully disinfected. The position of the fissure of Rolando was outlined first by means of Hare's method, and then by that of Horsley, the cranial index being determined from measurements made as follows:

Antero-posterior diameter 19.1 cm.; biparietal diameter 14.3 cm. $14.3 \div 19.1 = 0.748 +$. Practically the cranial index was therefore 0.75; and this corresponded to an angle of 69° for the Rolandic fissure. From glabella to inion was 13.25.

The position for the trephine centre was fixed 1.75 inches to the right of the median line, in the line of the fissure of Rolando. This was marked on the scalp by a small puncture in the bone. The fissure of Rolando was also marked at its two extremities by two similar punctures in the bone, so as to identify it after its surface marking was lost by the lifting of the flap.

A large horseshoe flap was made, and on turning this back no abnormal appearances of the skull were found. The centre pin of a one and one-half inch trephine was now inserted 1.75 inches from the median line as before determined, the upper edge of the trephine reaching to a point one inch from the median line.

Dr. Park kindly did the trephining for me, so that my hands should not be unsteadied by the muscular fatigue involved in this part of the operation. It was very fortunate that I asked him to do so, for the skull was very thick and the trephining required much time and a good deal of muscular effort. The thickness of the button removed varied from five-sixteenths of an inch to seven-sixteenths of an inch, and the diploë was almost entirely obliterated. The under surface of the button of bone was eroded in a number of connected small pits corresponding to the small growth described below. The little pits resembled a miniature bunch of grapes, the stem of the bunch consisting of a vessel of considerable size which had also eroded the bone.

On the removal of the button of bone, free hæmorrhage took place from the dura at the margin of the trephine opening where this vessel ran, but the bleeding was soon controlled by a ligature. The tip of the growth was one-sixteenth of an inch in front of, and the same distance internal to the centre of the trephine opening. The growth was elevated one-quarter of an inch above the surface of the dura, and after cutting the dura and lifting the flap, it was found that the granulation or growth had its origin apparently from the pia, and had bored through the dura and formed a nest for itself in the skull. The dura and pia were, of course, adherent at the point where the growth lay.

A triangular bit of the dura, including the growth, was removed by the scissors and placed in Müller's fluid. The exposed pia arachnoid was œdematous with enlarged veins and capillaries. Nothing else abnormal was found. A fissure corresponding to the line of the fissure of Rolando was seen, and five convolutions were exposed, all of which appeared to be normal. From the moment that the brain was exposed no antiseptics were applied to it, but only warm, boiled water.

Careful investigations were then made with the faradic current with a view of determining the cortical centres exposed. A small bipolar antiseptic electrode was used. A secondary current was applied; the electrode was connected with the terminal of a Flemming faradic battery, and the current was obtained by passing the switch to the first button of the instrument, and withdrawing the regulating cylinder to a distance of two and one-quarter inches.

The electrical tests clearly indicated that the centres for the shoulder, upper arm, thigh and knee had been determined, or probably the region which represents the merging of the movements of the upper and lower extremities. A consultation was held with reference to the propriety of excising this region, and it was determined to do this, first, in order to make a subcortical exploration for any further lesion, and secondly, to prevent the recurrence of the spasms by removing what seemed to be their primary seat.

With a pair of scissors and sharp bistoury a portion of the cortex, about three-fourths of an inch in diameter, was removed. It included all the cortical gray matter. The arm, leg and face were carefully observed during excision, but this mechanical excitation was absolutely without effect in producing movements.

After the excision had been performed considerable trouble arose in checking the hemorrhage from a large vessel, but this was controlled by two ligatures passed into the brain, and by temporary packing with iodoform gauze. During the operation, small bits of iodoform gauze were packed between the dura and the skull to check some hemorrhage. During the progress of the operation the pulse fluctuated markedly, becoming for a short time weak and rapid. The extremities also became cold. This occurred at the time of the considerable hemorrhage from the large vessel mentioned. The hemorrhage having been checked by pressure and hot water after the ligature referred to had been applied, a small rubber drainage-tube was inserted through the defect into the dura. A small bundle of horsehairs was also passed through and through under the flap, which was then sutured into place and dressed as usual. The bone was not replaced, as it was not deemed to be wise in consequence of its thickness and sclerosed condition.

On December 11th, the first day after the operation, the drainage-tube was removed. On the 13th, the third day, the horsehair was removed, and a slight escape of cerebrospinal fluid occurred. On the 15th, the fifth day, nine stitches were taken out and five were left. On the 21st, the eleventh day, the last stitches were removed from the wound, which was entirely healed, except at one or two of the stitch holes and where the flap was at a slightly different level.

Remarks.—The bone was so much thickened and sclerosed as to raise the question of whether there was not possibly an element of hereditary syphilis in the case, but this is positively excluded. In the absence of such an explanation it was, of course, possible that the thickening of the bone was due to the irritation caused by the pressure of the little growth. Whether it was a local thickening could not be accurately ascertained at the operation. In either case it seemed unwise to replace the bone.

Accuracy of localization.—The accuracy of the localization of the shoulder centre and also of the centres in its neighborhood is worthy of remark. The tip of the growth was found within one-sixteenth of an inch of the point selected as the location of the shoulder centre and the seat of the irritation.

The nature of the growth.—Its appearance suggested that it was a hypertrophied Pacchionian body, but the microscopical examination showed that it was sarcomatous, with some hemorrhagic pachymeningitis. That it was the probable cause of the epileptic attacks seems very reasonable.

Unfortunately, the irritation had continued possibly long enough to establish the epileptic habit, and to this may be due the fact that the attacks have continued since the operation, though with lessened frequency and severity ; or, as suggested by Dr. Mills, sarcomatous growths or infiltration may be present elsewhere in the brain. Whether they will ultimately disappear or not is a question which we are not yet in a position to decide.

Excision of the cortex.—We might have limited the operation to the removal of the growth and the dura which contained it, and then later, had the attacks not disappeared, have done a second operation and removed the shoulder centre. Against this, however, is the argument that a second operation involves a second peril to life, and also that the convolutions might have been so adherent to the flap and the new tissue which would fill the opening, that it might have been difficult at the second operation to recognize them, and to delimit the centres to be removed with the same accuracy that we could at the primary operation. All the questions which present themselves upon reflection upon such cases should be stated with a view to their consideration, and the determination of what is the wisest course.

Drainage.—Since this operation was done I have operated on a number of cerebral cases, with absolute closure of the wound without drainage. In two cases there has been considerable accumulation of bloody serum which has been evacuated by gentle separation of the flap between the sutures. In one case this had to be done four times, and in the other but once ; so that I am now quite convinced that, as a rule, drainage can be dispensed with in cerebral operations. Had it been dispensed with in this case the apparent risk of a fungus cerebri would have been avoided. In fact, I think this one of the strongest reasons why drainage should not be employed in cerebral cases. Possibly a few strands of horsehair might be used to advantage for a short time, but a drainage-tube should not be used.

After removal of the dura, cannot the loss of substance be made good by the transplantation of a piece of the pericranium?—In the after-history of the case one point was purposely not mentioned, but reserved for consideration here. A few days after the operation the flap bulged to such an extent that I was afraid that the union of the flap to the rest of the scalp would give way, and that a fungus cerebri would appear, especially at the site of the drainage-tube. Fortunately this did not occur, but gradually subsided and the wound healed without incident. In reflecting upon this case, it occurred to me that the conditions were most favorable for the formation, almost inevitably, of a fungus cerebi, which I believe actually took place subcutaneously, but unfortunately subsided without appearing on the surface. Under the flap was a deep well, corresponding to the thickened bone, the dura, and the excised portion of the brain—in depth perhaps an inch or more.

When the dura is opened and closed by suture there is little danger of a fungus cerebri, but where there is a loss of substance of the dura, and especially where the cortex is excised, there is a marked tendency to the formation of a fungus cerebri, especially where the distance between the scalp and the surface of the excised portion of the brain is as deep as in this case. To avoid this it occurred to me that we had ready means at hand in the transplantation of a piece of the pericranium similar to the transplantation of skin by Thiersch's method.

On the 10th of May, 1891, in another case operated upon at the Jefferson College Hospital an opportunity occurred to me to test this. A piece of the pericranium was separated from the scalp, cut loose, and attached by a few interrupted sutures at its margin to the dura, thus filling the gap produced by the excision of a piece of the dura. The transplanted bit was turned upside down, so that the osteogenetic surface lay upward, in order that if the bone should form from it, it should grow upward into the gap in the skull, rather than downward, and so possibly press upon the brain. The result was all that I could wish. No fungus cerebri formed, and up to September 1st he had not only been entirely free from his epileptic attacks, but there had been no mischief arising from the transplanted pericranium, which presumably therefore has retained its vitality.

MEDICAL HISTORY AFTER THE OPERATION, AND CERTAIN SPECIAL FEATURES OF THE CASE, BY DR. MILLS.

History of loss and recovery of power in the left limbs after the operation ; sensory investigation.—When the patient came to from the effects of the ether, she had a feeling of numbness and heaviness in the left arm and hand, and also at times in the back of the left shoulder—what she described as a "battery sensation," or a feeling of prickling. Five hours after the completion of the operation she was cautiously tested for motion and sensation. The tests were not elaborate, for fear of disturbing her too much. The left shoulder movements were paralyzed, but all the forearm, hand, and finger movements were retained, but weak. The power of flexion at the elbow was very feeble, probably abolished; extension was present, but much diminished. So far as could be determined, sensations of touch, pain, and temperature were preserved.

December 11th (first day after operation). The loss of power in the left arm and leg were about the same as noted the day before. Dynamometer: Right hand, 50; left hand 26. Sensation was carefully tested for and found to be normal.

12th (second day after operation). The paralysis of the shoulder persisted, that of the upper arm was increased, and there was more marked loss below the elbow and in the hand and fingers. The left leg was growing much weaker; the loss of power was most decided below the knee.

13th (third day after the operation). The foot movements were almost entirely abolished, but some power of flexion and extension of the thigh remained. The left upper extremity was completely paralyzed. No loss of sensation could be made out in the shoulder or anywhere in the upper or lower extremities.

From December 13th to 20th (third to tenth day after operation) the paralyzed left extremities remained the same —paralysis was total in the arm and almost so in the leg, the only power retained in the latter being that of pushing the leg downward after it had been thrust upward and held by the examiner. On December 20th (the tenth day after operation) the patient had slight power of extension and flexion of the thigh, and marked increase of power of extending or thrusting the limb downward against resistance. Gradually power returned to all parts of the lower extremity, as nearly as could be made out in the following order: Thigh extension, thigh flexion, abduction, adduction. Until January 3d (the twenty-fourth day after operation) no foot movements below the knee returned. At this date signs of flexion and extension at the ankle appeared. January 2d, she could flex the leg over the thigh, and cross the left leg over the right, and could perform, but in a weakly manner, all movements of the foot and leg.

No change was observed in the paralysis of the arm until December 29th (nineteenth day after operation) when, if the forearm was slightly flexed, she could extend it; at this time, as above noticed, she had regained considerable power in the lower extremity. January 1, 1891 (twenty-second day after operation), she began to flex the distal and second phalanges, but had no power of phalangeal extension, and no wrist movements. On January 3d (twenty-fourth day after operation) she could flex, extend and separate the fingers and hand, but had no elbow or shoulder movements. On January 6th (the twenty-seventh day after operation) she gained decided power in flexing and extending the elbow, and on January 7th (the twenty-eighth day after operation) she could elevate the arm nearly in a horizontal line. On January 12th (the thirty-third day after operation) she had regained all movements of both upper and lower extremities, and had been able to walk for several days. The limbs remained weak, and this weakness continued most decided for shoulder movements. All true paralysis, however, had practically disappeared.

The order in which paralysis of different muscular groups appeared and disappeared is of considerable physiological interest.

Knee-jerk was found to be increased on the left side, and ankle clonus was present on the day after operation. Gradually the exaggerated knee-jerk diminished, and on December 23d (thirteen days after operation), when the power of flexing and extending the thigh had greatly improved, ankle clonus disappeared.

History of spasms after operation.—At 4.30 P.M., on the day of the operation, the patient had a slight attack without unconsciousness, in which the right arm at the elbow and wrist was flexed, but the arm was not carried over the chest as in the old attacks; the head was drawn to the right. The left extremities and face and the right leg were not involved.

December 11th (first day after operation.) She had light seizures at 5, 6 and 8.30 P.M. The spasm affected both arms and the left leg.

A careful daily record was kept of the spasmodic seizures until February 1, 1891—that is, for a period of nearly eight weeks after the operation. She averaged four or five attacks daily, occasionally only one, two, or three. The majority of these seizures was in the early morning hours, between 1 and 2 A.M. They were commonly of moderate severity, none of them as severe as the frequent attacks which she had had several weeks just preceding the operation. The character of the attacks was usually as already described, but they varied somewhat at different times. As a rule, both arms took part, the right upper extremity becoming spastic in flexion, the left either in extension or extended and affected with some clonic spasm; the left leg was usually extended, but was sometimes flexed. The right leg, when included in the spasm, was usually semi-flexed at the hip and knee. During the week from January 26th to February 1st, the average number of seizures was somewhat smaller, on the 26th being only three, on the 31st two, and on the other days three, four, and five. So far as the distribution of the spasm in different parts of the body was concerned, their severity was somewhat influenced by the varying degrees of loss and recovery of power on the side paralyzed after the operation. About three days after the operation, as will be recalled, the paralysis of the upper and lower extremity was almost complete, and for several days the left leg took little part, or no part, in the spasm, taking, however, an increasing part as power was recovered. The same was true of the left arm. During most of the time that these notes were taken the spasms preponderated on the right side, the morbid ascendency of the left side, however, reasserting itself as power was more and more recovered.

This patient has been seen at longer or shorter intervals from the time of operation—December 10, 1890, to July 7, 1891. Her history has been a monotonous one, and can be condensed into a few sentences. Usually she has had about three attacks in twenty-four hours, these, as a rule, occurring during the night, most commonly in the early morning hours. Sometimes she had an attack after daylight, between 6 and 8 o'clock in the morning. Occasionally she has had two attacks in succession. The spasms have never attained the severity or frequency which they had for a short time prior to the operation. She had then as many as twelve to fifteen in twenty-four hours, often with total unconsciousness, involuntary urination, and subsequent great dazing and confusion of mind. At the time of the last examination and report, and for some time previous, the attacks usually began with a feeling of numbness in the left shoulder and a lifting and jerking movement of the entire left arm. The spasm spread, involving the left side, and sometimes also the right side. Sometimes she was unconscious in the attack, but as often not. She now has good use of both the left arm and the left leg, all movements being preserved. The left arm, however, shows some general weakness, is easily fatigued, and the patient thinks that overuse of it brings on the spells. Her general health is good—better than for a long time—and she has gained from five to ten pounds since the operation.

The small growth of granulation, with the attached piece of dura mater, and also the excised segment of cortical and subcortical tissue, were placed in the hands of Dr. Allen J. Smith for microscopical examination. Dr. Smith has prepared six slides showing the appearance of the membrane, growth, or granulation, and of the excised cortex. He reports that connected with the growth or granulation are spots of hæmorrhagic pachymeningitis, and several points in its interior which are decidedly sarcomatous. He also reports that beyond the engorgement of the vessels and the presence of hæmorrhage at the surface, and at one point at the margin, that the excised cortex was apparently normal.

At the time of the operation the general impression of those present was that the small growth was a large, isolated, pacchyonian granulation, which had perforated the dura and eroded the inner wall of the skull. The microscopical examination would seem to throw a doubt upon that view and make it more likely that after all we had a real neoplasm of very small size; but, perhaps, without further investigation, the question may not be regarded as absolutely decided. If the growth was sarcomatous, the possibilities are strong that other sarcomatous foci or growths were present in the brain; and it was in part because of the suspicion that a subcortical mass might be present that the cortex was excised. It is not improbable that the other hemisphere may contain a sarcomatous growth, as the localizing symptoms were at times confusing. The patient had clonic spasms of the right arm, although, as has been stated in the clinical history, the symptoms began on the left side and the attacks were initiated by both sensory and motor disturbances on this side. Since the operation right-sided spasms have often been a striking feature.

Supposing that the small tumor was a pacchyonian formation, it is by no means certain this had not to do with the causation of the spasmodic phenomena; and still another view that may be taken is that such a formation had resulted from the frequent and long-continued localized cortical discharges with their accompanying hyperæmia. The question of pacchyonian formations in general, and particularly of those which we sometimes see either isolated or in small groups, may have some importance in connection with the subject of cortical epilepsy and paresis.

PORENCEPHALUS, IN WHICH TREPHINING WAS DONE FOR THE RELIEF OF LOCAL SYMPTOMS; DEATH FROM SCARLET FEVER; EXHIBITION OF THE SPECIMENS.

This paper was contributed by Drs. DE FORREST WILLARD and JAMES HENDRIE LLOYD.

The patient was seven years of age, and had spastic hemiplegia of cerebral origin. There was inability to walk and internal strabismus. Muscular development was good. There was no anæsthesia, no antecedent history obtainable. There were convulsions followed by enfeeblement of mental faculties and athetoid movements of right arm. The child was getting rapidly worse and was trephined by Dr. Willard. The patient developed scarlatina three days after the operation and died on the eighteenth day. At the autopsy there were no signs of meningitis but there was demonstrable porencephalus involving the Rolandic region.

Dr. DANA, in opening the discussion, said that there was no question as to the validity or utility of operation in certain cases. The points that he would like to hear brought out were as to the propriety in operating in cases of Jacksonian epilepsy, tumors, for the relief of pain, and in porencephalus. He maintained conservative views on this subject, but would like to hear opinions relating to details in excision of the cortex, and as to operation for infantile cerebral hemiplegia. These cases were often associated with epilepsy, imbecility, or idiocy. He would like to hear more as to the operation for cerebral tumor. He referred to his recent collection of the histories and specimens of twelve cases of cerebral tumors which had not been operated upon. Three could have been recognized, localized, and operated upon. Two others were well-defined sarcoma in the middle of central convolutions.

Dr. B. SACHS mentioned that during the past year he had seen numerous cases bearing upon this question. The result of surgical interference in focal epilepsy he thought particularly distressing. He referred to Dr. Mills's case, and said that unfortunately, in spite of the operation, the epileptic attacks persisted. It had been shown that after removal of focus the secondary degeneration also affected the cortex. In cases of tumor, operation is more favorable, as secondary degeneration is less thoroughly established. In focal epilepsy we may render the case improved but not cured. He believed that no one could point to a single case with freedom from attacks for two years after operation. In operating upon porencephalus it would seem to be increasing the size of an existing cavity. Infantile cases should be carefully selected or the operation would fall into discredit. In porencephalus the motor symptoms are surprisingly great, while the mental symptoms are slight. Everything points to a pre-natal effect, rather than to an acquired cerebral palsy. Such cases as the latter are suitable for operation if seen at an early stage. This condition is frequently due to meningeal hæmorrhage, and we should operate early. If secondary degeneration has taken place the operation is useless.

Dr. NANCREDE, of Philadelphia, agreed with the previous speaker as to early operation, and cited a case in which no spasm had occurred for three years after operation for focal epilepsy of long standing. He believed that hernia cerebri after operation occurred as a result of encephalitis.

Dr. BREMER, of St. Louis, called attention to the importance of testing the muscular irritability in hemiplegic lesions by applying the faradic current to the shaven scalp. He had found the irritability greater on the affected side. Hs spoke of a successful case of operation for focal epilepsy, and had examined the excised portion of the cortex. There were no changes in the cellular elements, but there was abundant and excessive hæmorrhage in the intervascular spaces. This should teach us the precaution to avoid too much pressure on the cortex while operating.

Dr. DAVIS, of Philadelphia, referred to meningeal hæmorrhage in the newly-born as being generally due to disease in the mother, such as chronic nephritis, thus transmitting vascular degeneration to the infant and a predisposition to hæmorrhage. He believed in the propriety of early surgical interference only in marked cases, but the results were unsatisfactory where the mother suffered from constitutional disease.

Dr. BULLARD, of Boston, agreed with Dr. Sachs in his views as to the selection of suitable cases for operation in young children, and said that, although we cannot cure the focal epilepsy, we may alleviate many unpleasant symptoms. He referred to one of his recent cases in an adult with hemiplegia and epilepsy. The patient was trephined and a hæmorrhagic cyst evacuated. No attacks had occurred in two months. He thought it too early after operation to report the case. He believed that hernia cerebri may be due to a neglect of septic precautions.

Dr. J. J. PUTNAM, of Boston, said we deceive ourselves in believing because there are local spasms that there must be focal disease.

Extreme diffuse lesions may give rise to focal symptoms. He cited a case in illustration. This fact explains some of the unsuccessful results of excision. He agreed with Dr. Sachs in the view that the changes in epilepsy are diffuse, and advance independently of the bone lesion.

Dr. KNAPP held the same opinion as to the rather gloomy outlook in cases of trephining for focal epilepsy. He had had one case trephined when the patient had had but twenty fits; yet even here the fits returned. In another traumatic case, where the spasm involved only the muscles of the neck and arm there was found lepto-meningitis extending in all directions from the trephine opening.

Dr. MORTON PRINCE, of Boston, agreed with Dr. Putnam in regard to diffuse lesion causing focal symptoms. Literature did not seem to furnish histories which would enable us to discover the final results in focal epilepsy. We should operate and give the patient every possible benefit. He thought the relation of sensory to motor symptoms of importance. The sensory symptoms were most likely functional.

Dr. KEEN, in closing the discussion, said he was not aware of the character of the tumor at the time of operation. Possibly its removal without excision of the cortex would have been better. He has had no case of positive and permanent cure. The operation, he thought, was warranted, owing to the probability of relief. As to the existence of secondary degeneration in these cases he has been unable to verify this by microscopical examination. Cases of defective development, such as porencephalus, should not be operated upon, but operation may prove beneficial in cases of microcephaly, but the patient is exposed to greater danger. In thirty-seven such cases there were nine deaths.

Dr. MILLS said that at the first Congress, three years ago, the subject of cerebral localization, both from the neurological and the surgical side, had received large attention, and during the three years since the meeting an immense number of intra-cranial operations, some guided and some supposed to have been guided by accurate localizing phenomena, had been performed. The results had not been as brilliant, or even as encouraging, as our early enthusiasm had led us to anticipate. Something, however, had been accomplished, and many of the failures were not inherent to the subject and absolutely necessary, but had been the result of our still imperfect knowledge. Trephining guided by localization was not played out, but the science of localizing must become still more exact. We have learned that we cannot always depend upon signal symptoms and serial progression of spasmodic phenomena. We have learned that some of the sub-localizations are not exact. We have not yet nearly solved the localization aspect of lesions of association tracts between different areas of the cortex. Small lesions in the capsules and ganglia, and in various regions in the corona radiata, cannot always be fixed with an approach to accuracy. The importance of more thoroughly appreciating diffuse and multiple lesions has already been dwelt upon by others in this discussion, and our comparative ignorance of the characteristics of some of these lesions has been one of the important sources of error. His increased experience still led him to believe that we might, with a more perfect knowledge of brain functions, hope for good results in a certain small percentage of cases of brain tumor, abscess, and hæmorrhage as well as in some fractures and other traumatisms. He believed that operation was not warranted in clear cases of porencephalus. The value of excision of the cortex was unsettled, but the weight of evidence based upon operations done was against it, although he had had one successful case. He suggested that in certain cases, instead of excision, trephining might be performed, the dura removed, and direct treatment of the cortex, either by electricity or by local medication, might be resorted to with advantage. This could be done by local applications to the scalp or even perhaps by careful antiseptic hypodermic applications.

TUMOR OF THE MESENCEPHALON WITH EXHIBITION OF THE BRAIN.

Dr. LLOYD read a paper with the above title, reported the history of the case, and exhibited the specimen.

PARANOIA PRESENTING SOME INTERESTING FEATURES.

This was the title of a paper read by Dr. C. EUGENE RIGGS, of St. Paul. The patient was a young man who, together with various other symptoms, had periods of double consciousness. The question would arise as to whether the patient's peculiar acts were prompted by the morbid egoism so common in paranoia, or were a manifestation not infrequently associated with epilepsy.

DEFORMITY OF THE PALATE IN IDIOTS.

Dr. WALTER CHANNING, of Boston, presented a series of charts and plaster charts showing the formation of the palates of one hundred and fifty cases of idiocy. A prominent feature of interest was that this was the first time that any accurate observations with measurements had been made along these lines. From the writings of Dr. Langdon Down the impression had arisen that in nearly all idiots palates were vaulted and V-shaped. Channing had classified his cases into average, neurotic and deformed, showing a percentage respectively of forty-three, thirty and twenty-seven per cent.

THE VIRILE REFLEX IN RELATION TO CLINICAL AND FORENSIC NEUROLOGY.

Dr. HUGHES in this paper announces the discovery of an oral and aural reflex and the verification of the anal reflex lately announced as a discovery, and maintains that we are on the eve of great discoveries in reflex phenomena. He thinks that we are warranted in the conjecture of a law on the subject to the effect that all apparent paths of conduction terminating in a spinal cerebro-spinal or motor ganglion centre are, under certain circumstances either physiological or pathological—transformable in reflex expansion, where there is not distinctive or indurative change at the centre. In short, it is possible, apparently, from present data, to elicit reflex phenomena, if the appropriate stimulus is applied and central or peripheral conductivity is not impaired in many parts of the body in which this phenomenon has not yet been discovered.

ELECTION OF MEMBERS.

The following-named gentlemen were elected to active membership: Dr. H. A. Tomlinson, of Philadelphia; Dr. Edward Cowles, of Somerville, Mass.; Dr. Henry H. Donaldson, of Worcester, Mass.; Dr. James Wright Putnam, of Buffalo, N. Y.; Dr. William Browning, of Brooklyn, N. Y.; Dr. Edward B. Angell, of Rochester, N. Y.; Dr. G. J. Preston, of Baltimore, Md.; Dr. Richard Dewey, of Kankakee, Ill.; Dr. Walter Channing, of Boston, Mass.

PAPERS READ BY TITLE.

The following papers were read by title: "Syphilis of the Spinal Cord," by Dr. Philip Zenner, of Cincinnati; "Gunshot Wound of the Left Cuneus, with Complete Right Homonymous Hemianopsia," by Dr. J. T. Eskridge, of Denver; "The Virile Reflex in Relation to Clinical and Forensic Neurology," by Dr. C. H. Hughes, of St. Louis; "Facial Hemi-hypertrophy," by Dr. W. A. Hammond, of Washington; "A Case of Unilateral Paralysis of the Lips, Tongue, and Pharnyx, with the Presentation of Specimens," by Dr.

G. M. Hammond, of New York; "Fracture of the Eleventh Costal Spine, followed by Injury of the Spinal and Sympathetic Nerve-supply of the Bowel in the Region of the Ileocæcal Valve, Intestinal Hæmorrhage and Death on the Seventh Day," by Dr. J. T. Eskridge, of Denver; "Some Suggestions Concerning the Ætiology of General Paresis," by Dr. H. A. Tomlinson, of Philadelphia; "Statistical Notes on 232 Cases of General Paresis, with Special Reference to its Ætiology," by Dr. H. M. Bannister; "The Mortality of Epilepsy in Asylums for the Insane," by Dr. Wooster.

ELECTION OF OFFICERS.

The officers elected for the ensuing year were: *President*, Dr. C. L. Dana, of New York; *Vice-Presidents*, Dr. P. C. Knapp, of Boston, and Dr. E. N. Brush, of ——; *Secretary and Treasurer*, Dr. G. M. Hammond, of New York; *Councillors*, Dr. Wharton Sinkler, of Philadelphia, and Dr. E. D. Fisher, of New York.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of January 5, 1892.

The President, Dr. L. C. GRAY, in the chair.

THOMSEN'S DISEASE.

Dr. C. L. DANA exhibited a male patient, thirty-three years of age, who presented the typical phenomena of this disease. The family and personal history of the patient were good. There was no specific trouble, and no previous nervous disturbances. The first symptom noticed was a weakness of the muscles, which came on at the age of seventeen. Three years subsequently it was found that when the fists were closed they could not be opened again voluntarily for some little time. These conditions had increased, until at the present time the only muscles not involved in the process were those of the thighs and upper arms. The myotonia was most marked in the muscles of the forearms and legs. No contraction of the pillars of the fauces were observed. There were no sensory disturbances. Reflexes were nearly abolished, and could only be obtained by reinforcement. There was slight increase of reaction to the galvanic current, but not to faradic. The author felt convinced, from very careful tests of the muscles, that the phenomena were confined to the muscles themselves, and that it was not due to a reflex influence, but that the disease was a purely muscular one.

PERIPHERAL NEURITIS, OR POSSIBLE LESION OF THE POSTERIOR NERVE ROOTS.

Dr. W. M. LESZYNSKY presented a patient with the following history: A woman, fifty-three years of age, while trying to raise a heavy weight, injured the shoulder-joint. Neuritis of the brachial plexus developed within a few days. When she first came under treatment nearly six months after the accident, she was suffering from extreme pain and tenderness in the course of the median and musculo-cutaneous nerves. There was no circumscribed paralysis, but a general weakness of the entire limb. The pain was relieved by treatment. Within two weeks the entire extremity gradually reached a condition of complete anæsthesia, including loss of muscular sense. Subsequently the adductor pollicis and the flexor longus pollicis became paralyzed. This paralysis had disappeared, however, within ten days, and simultaneously there was a restoration of all forms of sensibility, including the muscular sense, over the thenar group of muscles and the entire thumb, the rest of the limb remaining anæsthetic. There was diminished faradic irritability in the thenar, hypothenar and inter-ossei muscles. Any hysterical element could be excluded. He thought the diagnosis rested between a peripheral neuritis affecting the sensory nerve branches, and a possible lesion of the posterior nerve roots.

Dr. MARY PUTNAM JACOBI did not see why Dr. Leszynsky was so positive in excluding hysteria as the probable cause of the condition in his case. The distribution of the anæsthesia was such as one might expect in a hysterical patient. Because there had been no other exhibition of any recognized symptoms of hysteria, did not exclude the disease in such a case as just presented.

SPASMODIC SCREAMING.

Dr. J. A. BOOTH presented a patient,aged seventy-three years, a peddler by occupation, who had been under observation in the Nervous Department of the Manhattan Eye and Ear Hospital for the past four years. He had also been a frequent visitor to the various clinics in the city. The patient had enjoyed good health up to nine years ago;

about that time, after one week of great headache, he had an attack of left hemiplegia, with disturbance of speech. He was ill in bed fourteen weeks, and during this time had suffered intense and constant pain in the head. The paralysis had gradually improved ; the disturbances of speech had disappeared, and he had returned to his business of peddling one year after the attack. Ever since the onset of illness he had had more or less head-pain, localized over the right parietal region, and which he had described as appearing in a spasmodic manner, shooting up to that portion of the head. The attack was ushered in by a flexion of the ring and middle fingers of the right hand, the other fingers being straight; the whole hand was then rapidly rotated, the attack culminating in a loud scream and the placing of the hand on the right side of the head. He had also complained of not being able to sleep, and his wife had corroborated this statement by adding that he was a nuisance to her and the neighbors by these attacks of screaming at night. These paroxysms could also be brought on apparently by suggestion, although the speaker had never been able to get the patient under the hypnotic influence. After going over the case carefully, Dr. Booth was inclined to believe that at the present time the patient was more of a simulator than anything else.

DEBATE ON THE THERAPEUTIC VALUE OF HYPNOTISM.

Dr. L. C. GRAY said that his object in calling for such a discussion was to ascertain the consensus of opinion of the New York neurologists in regard to the value of hypnotism therapeutically. He did not want to hear any historical data on the subject, but the personal experience of those who had given the matter serious attention.

Dr. DANA referred briefly to the work of the late Dr. Beard as being the only contributions made by an American author on this subject. From a long series of experiments that writer was convinced that hypnotism was a real condition and not a myth. He was not able, however, to produce partial states of hypnosis, although he attached some value to suggestive therapeutics. The speaker had been able to produce complete hypnosis in 15 per cent. of the cases submitted for experiment, and only a partial state in from 30 to 50 per cent. As to its value as a remedy in any of the known neuroses, it was doubtful if it had any efficacy. There were many therapeutic measures which were so much easier of application, and which possessed recognized virtues, that it seemed to the speaker unwise to exchange them for something with such subtle power and so difficult of control as was hypnotism. Taken altogether, it was a remedy that could rarely, if ever, be used with benefit.

Dr. G. W. JACOBY said that he had been through two epidemics of hypnotism, the first lasting from 1880 to 1884, and the second in 1888. In order to ascertain just what position he occupied in regard to the value of hypnotism as a therapeutic remedy, it was necessary for him to review his work in this direction. From old note-books he had found a record of nine cases marked cured, in which hypnotism had been the remedy. In following out the further history of these cases, which were of various forms of hysterical neuroses, it was found that in all and every instance there had been relapse of the trouble. This result had no doubt been the cause of the author abandoning hypnotism as a therapeutic agent. While it might possibly be good for some subjects, for the control of some symptoms temporarily, why should we use a method that was laborious and surrounded by mysticism and charlatanism when other remedies had to be ultimately resorted to anyway? The only way in which any conclusion could be arrived at in regard to the therapeutic value of hypnotism, was by means of statistics, and these, so far, had been more or less unreliable.

Dr. VOUGHT described the method of producing hypnosis as employed at the Vanderbilt clinic. Some bright object was held before the patient's eyes at which they were told to gaze, while the physician encouraged them to try and sleep. Such means had rarely failed to produce the desired hypnotic condition. In no instance was bad effect observed to follow its use; in some a slight pallor came on, but nothing of further consequence. The therapeutic application of hypnotism was successful in most of the cases, such as neuralgias and persistent pain. The speaker thought that it was to be recommended in this class of cases.

Dr. E. D. FISHER said that, so far as his experience and personal observation went, he was not favorable to the use of hypnotism as a therapeutic remedy. He had not as yet seen or heard of any permanent successful issue from such procedure. He thought that it might also be a dangerous measure in many cases, especially in certain mental conditions. At any rate, if hypnotism were to be used at all it should be only with the greatest precaution.

Dr. J. W. COLLINS had used hypnotism in thirteen cases, and was able to report cure in five of these. It was not his practice to use the remedy promiscuously, but when he had decided that the case was suitable for hypnotism he had carried out the system of mental suggestion, and was able to get good results from it. While he did not claim that hypnotism was a panacea for all nervous diseases, he was satisfied that it possessed therapeutic value in certain cases. He thought that it was a great mistake to say that patients were non-hypnotizable if they did not succumb to the influence in a short time. He had seen the masters in this branch at work at a patient for one, two and even three hours, in some instances, before they could be brought under the hypnotic influence. He did not want to appear as an enthusiastic advocate for hypnotism, but he was convinced that it had a field in certain psychical conditions, and especially in moral perversions. Considering the fact that the present method of dealing with these cases offered but little in the way of cure there should be no hesitancy in at least giving hypnotism a fair trial, and not being satisfied with simply an attempt or two, but persisting until such a condition of the patients was brought about so that mental suggestion could be responded to. If carried out consistently the author was sure that hypnotism would offer more as a moral educator than any other measure that had ever been advanced.

Dr. LESZYNSKY thought that the length of time it took to get the patient under the hypnotic influence was a matter of indifference. As yet there were no statistics to show the bad influence of hypnotism, but in cases where the author had failed to produce hypnosis the patients had been left in an uneasy, uncomfortable state. He did not think hypnotism by any means devoid of danger. He described the case of a child twelve years of age, whom he had treated for hysterical attacks of laughing and crying. She had improved very much under ordinary attention and finally passed out of the author's hands. Some time subsequently there was a slight return of the trouble and the mother took the child to some one who tried hypnotism, the first attempt being unsuccessful, but which was persisted in until complete hypnosis was brought about three or four times. From this time on all of the symptoms became exaggerated, and when the author saw the patient again she had developed all of the phenomena of hysteria. He felt satisfied that hypnotism was responsible for the deterioration in the nervous tone and the development of hysterogenic zones. It had been two years since he had practiced hypnotism. The last patient upon whom he had tried it was suffering from singultus; during the hypnotic state the spasm was abolished; suggestion at this time that the paroxysm would not return when consciousness was restored proved a failure, as the spasm had returned in an aggravated form. As for hypnotism being applicable in insanity it was thought rather doubtful that it could be done at all, for the reason that the degree of concentration necessary could not be obtained in this class of patients.

Dr. BOOTH had during the past four years made use of hypnotism in twenty-four cases—fifteen females and nine males. Of the fifteen females ten were easily hypnotized and responded to suggestion; in five no hypnotic effects were produced, although repeated attempts were made. Of the nine male cases six were failures. The histories and treatment of four cases were then read in detail. Case I. A young girl aged seventeen years, suffering with tremor of the left upper extremity, was hypnotized daily for one week, during which *séance*, proper suggestion was made. At the end of that time the tremor had entirely disappeared and had not returned a year after treatment. Case II. Hysteroid attacks in a girl aged nineteen years. She was easily hypnotized and was markedly lethargic, going into a deep sleep from which it was difficult to arouse her either by suggestion or stronger measures. Subsequent *séances* did not produce such marked effects and were successful in lessening the number of attacks. One attack only had occurred during the past year. Case III. Double ptosis. The patient was easily hypnotized, and after fourteen *séances* there was marked improvement. Case IV. was another patient with hysteroid attacks, which was ultimately cured by hypnotism.

Dr. B. SACHS had not been able to do much with hypnotism, and as yet had accomplished nothing therapeutically. He had tried the method in cases of hystero-epilepsy and where persistent pain had existed for years; in every instance the therapeutic effect was absolutely *nil*. The only two cases in which a certain amount of benefit seemed to be derived from hypnotism were of nerve-deafness occurring in two young women. The improvement continued during four weeks in one case and three months in the other. He thought however that hypnotism, as far as any real therapeutic value was concerned, was only a fashion at present and that it would soon be laid on the shelf.

Dr. JACOBI described a case which had recently come under her observation, the course of which possibly bore some analogy to the way in which hypnotism operated upon the nutritive states through some controlling mental emotion. The patient, a woman of emotional characteristics, had complained of severe pain in the shoulder-joint. There was present much swelling and anæsthesia. Despite all treatment the condition had increased in severity. After the tenth day hysterical attacks of screaming came on, followed, fourteen days after the onset of the trouble, by considerable vomiting of blood. About this time the patient's child had become dangerously ill and had died in a few days. From this time on all her symptoms connected with the shoulder and the general condition had gradually subsided and had finally disappeared. Health in a short time was completely restored. The speaker thought that this was a clear case of great mental emotion having the power of reorganizing and controlling the nutritive states, as shown in the rapid recovery, when the mind was concentrated on the illness and death of the child.

Dr. L. C. GRAY had practiced hypnotism since 1886 upon hundreds of cases in his hospital wards, but had finally given it up in this class of patients, as he had found that it had a demoralizing influence and that moral control over them was lost by persisting in its use. In some cases where he had tried hypnotism he had found that his patients would leave him and go to some one else. He thought, however, that in the present study of hypnotism we were only on the verge of a great developmental knowledge of psychical laws, which might prove to be of great value. From his experience in the use of this agent as a therapeutic measure he was not able to say in what class of cases or individual case it would or would not be beneficial. If he could draw any deduction, he would say that the hysterical cases offered the best results. No one understood the nature of hysteria anyway, and there were no conclusive criteria by which hysteria could be diagnosed, but in the symptoms laid down as such, hypnotism had produced some amelioration although relapses occurred. In functional symptoms, such as delusions of fear, fright and timidity, etc., good results were obtained by hypnosis. In other neuroses, such as neuralgias and organic diseases of the nervous system, the benefits were not as good as from other known remedies. The author had never been able to hypnotize an insane patient, and in the paranoiæ the practice had filled these patients full of delusions. Altogether no good results were obtained in these two classes of patients, but much harm in the latter. There need be no difficulty in hypnotizing patients; if it could not be done in one way it could be done in another. The author had found that where patients were hard to get under the influence they were apt to sink into coma afterward. He had had such a case where the patient, when observed some short time after being hypnotized, was almost in a comatose state and was very ill for the remainder of the day. He had never heard of a death being produced by hypnotism, but did not think it unlikely that it might happen. He would not, however, condemn hypnotism until it had a further and more conscientious trial.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Stated Meeting, November 25, 1891.

The President, Dr. H. C. WOOD, in the chair.

TWO CASES, BROTHERS, OF FRIEDREICH'S ATAXIA, ASSOCIATED WITH SYMPTOMS OF SPINAL CHOREA.

BY J. MADISON TAYLOR, M.D.

As a contribution to the interesting subject of hereditary cord trouble, I think it well to put on record the brief and imperfect notes of two brothers, who came under my observation two years ago. These men I have not been able again to see for further study, but am of the opinion that such facts as are in my possession might be of use in throwing additional light upon this interesting study.

S. R.,a strong-looking vigorous man of thirty-six years of age, applied to me for relief from a condition of increasing tremor. The tremor was the most noticeable feature—fine, disturbing his voice, and giving it a vibratile quality, and also to his limbs a constant choreiform movement. This was much like the movements of a child with general chorea. Volition lessened the movements much, and he was enabled to make a pretty fair living as a farm laborer. His gait was decidedly ataxic; very like the ataxia of posterior sclerosis. The knee-jerk had entirely disappeared, nor could it be re-enforced. This man had been married eleven years, and had three healthy children. His parents were living and healthy. There were several brothers and sisters, one brother affected like himself, whose notes are also given below. This man was five feet five inches high, exceedingly well-nourished and muscular. He had enjoyed the reputation of being quite an athlete, and I was assured by a friend, who accompanied him, that he could stand upon a piece of soft ground and turn front somersaults very cleverly. There was no history of syphilis or any serious disorder. There never had been any injury. The first symptom that he could recall was a tremor in his right hand, which began about the age of twenty-four or twenty-five. Four years later it appeared in the head. At the age of about thirty, darting pains began in the lower limbs ; sensation apparently unaltered; station very bad. Upon attempting to stand, the man lurched so largely as to have some difficulty in steadying himself upon his legs, but once securing his balance he could stand pretty well. In starting to walk, a rush was made first, which, being recovered from and the way perfectly plain, he could walk quite comfortably with the rolling gait of a sailor. Standing, however, with eyes closed the man almost always fell. This large tremor had greatly increased of late, especially in the neck, giving to the head a sort of rolling motion, like that seen in dogs troubled with chorea. The knee-jerk was absolutely gone in both legs, and could not be elicited by re-enforcement; in the arms it was scarcely demonstrable. The pupillary reactions roughly taken seemed very sluggish to light, and for distance were only moderately good. Digestive functions excellent; heart sound; muscular system unusually good.

M. R., aged nineteen, a rather short, but rather muscularly-built man, brother to the above, had for four or five years stumbled in the dark. The general features of tremor, etc., were much like that of his brother, in lessened degree. The voice had the same virbratile quality. He admits to having a very quick temper, and notices that, if greatly excited, he always loses the power of clear speech, or accurate co-ordination. The station of this young man was very bad. The eyes being shut, wide lurches were made, though the position could be held. The knee-jerks on both sides had entirely gone; arm-jerks normal, but upon re-enforcement seem rather exaggerated. The pupils respond quickly to light, but there is a slight nystagmus in the left eye; sensation does not seem altered ; voluntary motion also controls tremor largely ; general health good ; functional activities admirable ; no history whatever of injury or disease.

DISCUSSION.

Dr. **Wharton Sinkler.**—From the historyof Dr. Taylor's cases, it seems to me that they were cases of the hereditary form of ataxia rather than cases of spinal chorea. The occurrence of the disease in two members of the same family, the absence of the knee-jerk, the inco-ordination, the sluggish pupillary reflex, and the nystagmus point in this direction. The tremor of which Dr. Taylor has spoken is, as we know, frequently present in the Friedreich's ataxia, giving rise to the so-called static ataxia, that form which is present when the patient attempts to assume the erect position, or to hold out the arm or leg—in fact, the tremor occurs when the patient attempts to maintain the head or a limb in one position.

Dr. **F. X. Dercum.**—I have seen only one case that I considered spinal chorea, and Drs. Weir, Mitchell and Burr concurred in the diagnosis. In this case, although there was not a well-marked to-and-fro movement, there was a tendency toward rhythm, such as is seen in chorea in the dog. The term "canine chorea," used at first by Dr. Mitchell, seems a better one than spinal chorea. There is still room for a difference of opinion in regard to spinal chorea being a distinct clinical entity, but certainly the case that I saw was different from any case of ordinary chorea that I have met with.

A CASE OF FRIEDREICH'S ATAXIA.

By FREDERICK A. PACKARD, M.D.

The patient that I wish to show to the society this evening was admitted to St. Clement's Hospital on October 10th, 1891, complaining of difficulty in walking.

The following notes were taken : Annie C——, white, æt. 25, a native of Pennsylvania, came from the interior of this State. Her father and mother are living and in good health. She has six brothers and four sisters, Annie being the fifth child. All her brothers and sisters are living, and are all healthy, with the exception of one brother, who has "trouble like hers." Regarding the symptoms and history of this brother, I received a letter from the mother, in which she says that he is thirty-one years old, and has been living in Nebraska for several years. That several years ago he began to have trouble in walking, which has increased much "of late ;" that his speech has not changed, but that "he has trouble in using his hands." Nothing more definite could be obtained. There is no history of intemperance or consanguinity in the ancestors.

She had scarlet fever and measles as a child, but seemed to recover from them perfectly. She has always been strong and well until the present trouble began. She has always talked slowly, but her mother states in her letter that, "it may be her disease causes 'that sort of chanting,' as you say." Her mother states that a change in her manner of walking has been coming on for several years, but that it was not marked until last autumn, when she began to waddle on walking. Annie herself dates her trouble from one year ago, when she began to notice that when she became tired she would walk unsteadily. This trouble with walking gradually became more pronounced, so that she soon found that she walked unsteadily, whether tired or not. She has noticed that she walked more unsteadily in the dark than in the light, and that when her eyes were covered by her hands, as in washing, she would reel. She has had no pain whatever——nothing in the nature of girdle—sensation or lancinating pains. She at times suffers from frontal headache, with vomiting, but there is nothing bearing resemblance to gastric or other crises. Hearing is normal. Vision is defective, being at times affected as though by a cloud before her eyes. This latter trouble has only been noticed since last spring. She sleeps well. Her appetite is good; there is no dyspepsia, and her bowels are slightly inclined to be costive. There is no sphincter trouble in either rectum or bladder. There is no tendency to œdema, no nocturnal urination, no dyspepsia, no palpitation or cough. Menstruation is normal, except for slight abdominal discomfort for a day before the flow appears. She has at times some apparently causeless vertigo. There is no dysphagia or other bulbar symptom except the speech derangement.

Status præsens.—She is a well-nourished, strong-looking girl. Upon questioning her, her answers are found to come slowly, speech being somewhat chanting, with irregular pauses between the words, and a certain amount of drawling over individual sentences. There is likewise a peculiar catch in the voice. There is a constant "far away" yet concentrated look, chiefly noticeable when she is talking, at which time she appears to be looking at some distant object over the examiner's shoulder. The pupils are contracted equally, and react well to both light and accommodation. There is no contraction of the visual fields, as roughly tested with the finger. There is slight internal strabismus in the right eye. Upon entire lateral motion there is faint nystagmus, while, at the same time, there is distinct diplopia. The examination of her eye-grounds was kindly made by Dr. Cross, the ophthalmologist to the hospital, who reports slight dinginess of the optic nerve in the right eye, with some myopia in both eyes—vision, o. d., xx-70, o. s., xx-50. Her tongue is clean, is protruded properly, but there is a slight tremor in it. The teeth are in good condition. Heart and lungs normal. There is slight incoördination in the hands. Dynamometer: r.; 28, l. 24. Two points of the æsthesiometer are differentiated upon the dorsum of the right hand at two inches; upon the left at two and three-quarter inches; temperature sense acute. There is no tremor or static ataxia; biceps tendon-reflex is absent; the spine is straight and without tender points. Down the centre of the back is a dark-brown stripe, four inches in breadth. The gait is unsteady, waddling, and with somewhat of a fling of the feet. Upon endeavoring to walk along a crack in the floor, there is marked deviation from the straight line. Station is unsteady, much swaying being present when the eyes are closed. Knee-jerk upon both sides is much diminished, and is at times absent. There is neither ankle clonus nor rigidity. Two points of the æsthesiometer are differentiated upon the dorsum of the right foot at three and one-half inches, of the left at three and one-half inches. Temperature sense acute; examination of the urine negative.

It will be seen, therefore, that this patient presents in a more or less marked degree, the characteristic features of Friedreich's ataxia. There is presumably a similar disease affecting one of the brothers. She has a markedly ataxic gait and station; the knee-jerks are almost abolished, and her speech has the peculiarities seen in other cases of this disease. The case is reported not as showing anything new, or as being an example of any extremely rare disease, but merely that I may in this way place one more case of the disease upon record.

NEURITIS OF THE SACRAL PLEXUS AND SOME OF ITS BRANCHES, AND SUBSEQUENT POLIO-MYELITIS, THE RESULT OF DIFFICULT LABOR.

By CHARLES K. MILLS, M.D.

The patient, Mrs. W., about thirty years old, in 1874, had an attack of arthritis of the left knee-joint. Her first child was born in 1880. Her first husband died in 1884, having, it is believed, infected her with syphilis, of which she had evidences in ulceration of the throat and severe headaches. She was married a second time in 1889. She was in labor July 3d, 1891. The labor was difficult; it was necessary to make use of instruments, and chloroform was administered.

On coming to from the chloroform, her first complaint was of severe pain in the hip, leg and foot, and from this time on she was paralyzed in this extremity and suffered severely, both with spontaneous pains in the limb and extreme hyperæsthesia over nerve trunks, on handling or jarring the limb anywhere, on squeezing the foot laterally, or in any way manipulating her so as to jar or press upon nerves. The pain at first was most marked in the back of the thigh. In a week or two it passed downward to the foot, and was most decided at the instep. It was necessary to separate her toes with cotton because of the pain, and for a long time it was almost impossible to touch her in the limb because of the suffering it caused. This condition of pain and tenderness continued without much abatement for more than three months, when it began to decrease, and about the second week in October had almost entirely disappeared; but the leg was still left in a condition of extreme motor paralysis.

Five weeks before she was first examined she was suddenly stricken, without unconsciousness, with paresis of the left upper extremity, and some difficulty or thickness of speech. These conditions had improved slightly, but still persisted at the time of examination. They were evidently due to a cerebral attack, probably hæmorrhage or thrombosis, the outcome of her old specific trouble.

Taking the history into consideration, the examination showed some interesting points connected with the question of the occurrence from traumatism or otherwise, both of neuritis and polio-myelitis. in the same case. Below the knee all movements were totally paralyzed, except those of the gastrocnemius, soleus, and posterior tibial; and degeneration reactions were present in the paralyzed muscles. The foot was swollen, purplish in color, and cold. No loss of sensation was found anywhere on most careful searching ; but she had great pain on pressure at the sciatic notch and in the sacral plexus examined through the rectum. The muscles above the knee were not paralyzed ; knee-jerk and muscle-jerk on both sides were normal.

Various diagnoses were made in this case, among them rheumatism and hysteria. Clearly the paralysis and pain and tenderness were the immediate result of traumatism during labor, although constitutional syphilis may have caused the trouble to spread faster and farther than it would otherwise have done. Clearly, also, this patient had a neuritis, chiefly of the upper cords of the sacral plexus and their branches in the leg ; probably, also, the lumbo-sacral cord, which connects the lumbar with the sacral plexus, was involved. The point of most interest to me, however, was that the neuritis had not only descended and diffused through the entire leg to the toes, but it had also ascended until the spinal nerve roots and anterior horns of the cord were included in a destructive and inflammatory process. The paralyzed muscles below the knee were typical examples of the polio-myelitis type of palsy—helpless, strophied, discolored, and reactionless to the electric current, but without pain anywhere in them or in their supplying nerves. Some evidences of neuritis still persisted high in the leg. It might be said that the nerves supplying the affected muscles had recovered from the active neuritis, but had not regenerated sufficiently to cause any improvement in the motor paralysis ; but I do not think that such an explanation is sufficient to clear up the case. The nerves originally involved were mixed nerves, and serious degeneration of them would have left areas of anæsthesia as well as motor paralysis. The best explanation is, that both neuritis and polio-myelitis occurred, and that the patient has not recovered from the effects of the latter.

The cerebral attack has no bearings upon the question here discussed.

DISCUSSION.

Dr. F. X. DERCUM.—I have seen one case in which neuritis followed difficult labor. Great violence had been used. The perineum was torn through the sphincter, the sacral plexus bruised, and permanent injury was thus done secondarily to the limb. There was both wasting and loss of power. There was also some slight anæsthesia. I saw the case some eight or nine months after the labor.

Dr. JAMES HENDRIE LLOYD.—An interesting point in connection with these cases following labor is that of septic infection. Veterinary surgeons know that sometimes in the lower animals paraplegia follows labor. This has been observed in cases of inflammation of or about the womb, and is caused probably by a septic neuritis or spinal meningitis. Some, notably a leading French authority, deny that pressure is a frequent cause of these post-mortem paralyses. Certainly, if pressure caused them all, it would seem that they ought to be of more frequent occurrence, seeing how nearly identical the conditions are in the vast proportion of labors. Some years ago I dissected the pelvis to observe the relations of the pelvic viscera with the nerve trunks. A posterior position of the head would be most apt to cause pressure-palsy. The sciatic nerve would be most apt to suffer. It is rather difficult to understand how ordinarily the crural nerve, which runs along the brim of the pelvis, could be compressed by the head.

Dr. **WHARTON SINKLER.**—I wish to put on record an interesting case of neuritis following labor. The patient was a small woman, a primipara, and the labor was instrumental and very difficult. On recovering from the anæsthetic, she complained of severe pain in the legs, and the pain and hyperæsthesia continued for some weeks. I saw the patient in consultation about six weeks after labor. There was then contraction of the knees, and the muscles were considerably atrophied. There was extreme hyperæsthesia, especially below the knee. There was no special pain over the nerve trunks, no loss of reflexes, and no loss of response to the faradic current. The patient recovered entirely, and in two months was walking about perfectly well. This is the only case of neuritis following labor that I have seen. It was complete and equal in both legs.

Dr. **JAMES TYSON.**—I came to the meeting hoping that Dr. Mills' paper would throw some light upon a case in which I am now interested. It was a case of intra-uterine columnar papilloma, operated on by Prof. Goodell, of this city. In this case the pain, which is very considerable, is entirely extra-pelvic, radiating down over the buttocks and to a slight extent to the groins. It has occurred to me that possibly the pain was merely a coincidence, and that the internal uterine growth had nothing to do with it. In the earlier history of the case the pain was abdominal.

Dr. **CHARLES K. MILLS.**—We may have, and that is the point of this communication, a type of puerperal paralysis which is concurrently neuritic and polio-myelitic. It seems likely that in Dr. Tyson's case the suffering is due to a neuritis involving the lower of the cords constituting the sacral plexus. With reference to septic paralysis following labor, it may be, on the other hand, that the facts that I have mentioned are overlooked. Instead of being septic these cases may be traumatic, and sometimes instances of ascending neuritis and eventually of myelitis, is of a concurrence of the nerve and cord disease.

Dr. **CHARLES K. MILLS** next reported a case of

VIOLENT HYSTERO-EPILEPSY AND HYSTERO-CHOREA OF THIRTY YEARS' DURATION.—EXTRAORDINARY ROTATORY, WHIRLING, THRESHING, CLAPPING AND STAMPING MOVEMENTS.

I wish briefly to call the attention of the members to this case, as although it has been my fortune to see an unusual number of cases of hystero-epilepsy, this was the most extraordinary in the violence of its manifestations that has ever come under my observation. It was a case approaching the demoniacal type spoken of by French observers, and reminded me more than any case I have ever seen of some of the mediæval instances of hysterical convulsion. The patient, a woman, sixty-one years old, was brought for consultation from one of the interior counties of Pennsylvania. For a period of thirty years she had been having these attacks, usually of the same general type, but differing somewhat in violence, and occasionally disappearing for comparatively long intervals. For a long time before coming under observation she had been having them almost daily. Her family, her friends and physicians were worn out in their efforts to relieve her. One physician, who took charge of her in his own house, in which he had a drug store, was compelled promptly to give over his ministrations to her, from the fact that in a short time she had thrown down and broken a large number of his jars and bottles, by the violent vibrations communicated from her room to all parts of the house.

I was called to see the patient at a Philadelphia hotel, where, however, for obvious reasons, she did not long remain. I found her lying on a bed—a tall, gaunt, wiry, muscular-looking woman, with a weird expression of face. After a little conversation, I had her get on her feet in order to examine her better, when, in a minute or two, her convulsive movements began. They were so violent and remarkable as almost to baffle description. Her upper extremities were first elevated to about a plane with her shoulders and contorted into grotesque positions ; in a minute or two the contorted right arm began to rotate vertically around the shoulder as a pivot, the movement being accompanied by a half rotation of the head and constant twitchings and contortions of the face. These movements became rapid and violent; in a short time she sat down, and now these changed to a rapid and exceedingly violent threshing with both arms ; this was interspersed at frequent intervals with claps of the hands, given with great force, so that they resounded like pistol shots. The threshing movement was then changed to an up-and-down movement of the arms, sometimes striking the knees and sometimes not, still interspersing with the violent clappings. Next the patient began to lift and stamp with both feet with great force upon the floor, jarring and shaking the building ; and so went on for more than an hour a series of the most extraordinary movements of head, arms, hands, legs and feet, trunk and entire body.

Dr. F. X. Dercum presented the following specimen:

DISTENDED INFUNDIBULUM AND ABSORPTION OF THE OPTIC CHIASM IN A CASE OF INTERNAL HYDROCEPHALUS.

I have here a rather rare specimen removed from a patient in the Philadelphia Hospital. He was admitted to the institution June 21, 1890. He was about fifty years of age. He had a scar on the scalp, produced, he said, by a bullet-wound twenty years before. He was apathetic, and memory was impaired. There was general muscular tremulousness with weakness. He stood with difficulty. The knee-jerk was greatly exaggerated; eyesight very poor. History was obtained with difficulty. It was learned that about two years before he had had severe head pains, which confined him to the bed for five months. He had no loss of consciousness or delirium. He had one convulsion. There was no fever. Since then the mind had gradually weakened. His eyesight had been failing for five years, and when he came under my observation he was almost completely blind. The left eye had failed first. There was weakness of the extremities, more marked on the left side. The case was unsatisfactory on account of the meagre history.

The patient died, and the post-mortem was made yesterday. The condition found was as follows: The calvarium was normal; the dura was much thickened; the pia and arachnoid were thickened, particularly at the base; the vessels at the base were somewhat atheromatous. What was most striking was the apparent absence of the chiasm. The infundibulum was much distended and felt like a cyst; the optic nerves terminated in this thin attenuated structure, while nothing but a trace of the optic tracts could be seen to either side; all the ventricles were found to be excessively dilated; the ependyma was velvety, and there had evidently been an internal hydrocephalus from ependymitis. The case seemed to be one of destruction of the chiasm by pressure from above. We have not yet had an opportunity to make a microscopical examination of the specimen, and until then a more detailed report must be deferred. The specimen is, as already remarked, very extraordinary, and is shown in its fresh condition.

Adjourned.

Book Reviews.

THE NEUROSES OF DEVELOPMENT. Being the Morrisonian Lectures for 1891. By T. S. Clouston, M.D., F.R.C.P.E., Physician-Superintendent, Royal Edinburgh Asylum for Insane; Lecturer on Mental Diseases, Edinburgh University.

The profession, both special and general, are to be congratulated that the above lectures delivered at the Edinburgh University, and published during 1891 in the "Edinburgh Med. Journal," to the delight and profit of both hearers and readers, are embodied in permanent form. In common with everything from the pen of the author, it is replete with useful practical knowledge. The book is not alone one of absorbing interest to the alienist, but is one that cannot fail to be of inestimable value to the general practitioner, who more than any other is placed in the position of being able to steer successfully into ways of physical and mental health (which, after all, are those of happiness and right-doing) many a frail craft that comes into the world over-freighted with inherited tendencies to disease and sin.

Upon this point, Dr. Clouston says, "that the family practitioner only has access to the fact of the early and minor neuroses of children, which he adds are just as important to be studied as the graver nervous lesions."

In a book so full of valuable information, developing so much of new ground and inspiring, as it must, every thoughtful worker to earnest effort, is quite impossible to distinguish as to the merit of one part over another. As to the prevention of the neuroses of development, Dr. Clouston fitly says in conclusion: "Build up the bone, and fat and muscle, especially the fat, by any means known to us during the period of growth and development. Make fresh air the breath of life to the young. Develop lower centres rather than higher ones, when there is bad heredity. Don't give too much flesh and nitrogenous food during growth and adolescence, as being special stimulants to the higher cortex, and to the too early development and dominance of the reproductive functions and the sexual nisus. Avoid alcohol and nervine stimulants absolutely, if possible. Do not cultivate, rather restrain, the imaginative and artistic faculties and sensitiveness, and the idealisms generally, in the case where such tend to appear too early and too keenly. They will be rooted on a better brain and body basis if they come later. Cultivate and insist on orderliness and method in all things. The weakly neurotics are always disorderly, unbusiness-like and unsystematic. Fatness, self-control, orderliness are the three most important qualities for them to aim at." M. C.

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CHAS. HENRY BROWN, M.D.,

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MARCH, 1892.

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THE
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Original Articles.

THE MORTALITY OF EPILEPSY IN ASYLUMS FOR THE INSANE.[1]

By W. L. WORCESTER, M.D.,
Assistant Physician Arkansas State Lunatic Asylum, Little Rock.

IF an interne in a general hospital, in consulting the authorities on such diseases as pneumonia and typhoid fever, should find that, almost without exception, they either said nothing of any danger to life from those diseases, or stated explicitly that they very rarely proved fatal, he would probably before very long begin to wonder whether his cases were of very exceptional severity, or there was something entirely wrong in his treatment. In a somewhat similar quandary does the physician in an asylum for the insane find himself in respect to a disease which, if I were to judge from my own experience, which has extended over a period of thirteen years and comprised more than two hundred cases, I should compare for deadliness, not to such diseases as I have mentioned above, but to small-pox and yellow fever.

In the *Medical Record* of April 28, 1888, I published an article in which I showed that in the Michigan Asylum for the Insane, from its opening to that date, a larger number of epileptics had died from epilepsy than from all other diseases put together, and that the proportion of epileptics dying from the direct effects of that disease to the total number of cases admitted was larger than that of deaths in the general population of the institution from all causes combined. I also showed, from the statistics published in the reports of thirty-seven similar institutions for the preceding year, that the experience of the Michigan Asylum in that respect was more favorable than the average. In that institution, out of 234 epileptics admitted, 62, or 26.5 per cent., had up to that time died of epilepsy. Thirty-seven asylums reported 535 epileptics admitted and 143 deaths, or 27.6 per cent., in 1886, and fifteen which gave statistics from the beginning reported 2,029 epileptics admitted, with 611 deaths from epilepsy, a mortality of 30.1 per cent., making no allowance for those who had been discharged and those still under treatment.

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[1] Presented to the American Neurological Association at Washington, September 22, 23 and 24, 1891.

I have never seen any attempt either to controvert or to explain away those statistics, but they do not seem to have attracted very much attention, and works by standard authors appearing subsequently to that time have reiterated the statements previously current in regard to this subject. Gowers (Diseases of the Nervous System, p. 1104) says :

"The risk to life in epilepsy is not great. The mere violence of the fit, appalling as it may be in its aspect, rarely causes death. The dangerous 'status epilepticus' is too exceptional to constitute a measurable element in the prognosis. The greatest danger is in the cases in which there is a tendency to turn on the face, or to vomit after a fit, but even this is slighter than that of the accidents to which the attacks expose the patient. Many epileptics die by drowning ; the fit not only occasions the fall into the water but prevents any effort to escape, and hence an epileptic has more than once been drowned in a ditch."

Ranney (Lectures on Nervous Diseases, p. 482) says :

" Finally it may be said that little danger to life is to be apprehended in epileptic seizures. I have never known a case where death occurred directly from the fit, although many cases may have met their death indirectly from that cause, through suffocation, drowning, etc."

The discrepancy between such statements as these and my statistics is obvious enough, and its cause seems to me a matter of scientific and practical interest. As subsequent experience has only confirmed the views expressed in my former article, I venture to call attention to the subject once more, rather in the hope of eliciting facts from those whose experience has been in another field than because I have anything essentially new to offer.

TABLE I.

Showing total admissions, total deaths, admissions of epileptics, and deaths from epilepsy shown by the annual and biennial reports of 82 asylums for the insane for 1890.

	Total Admissions.	Total Deaths.	Epileptics Admitted.	Deaths from Epilepsy.
Arkansas, State Asylum, Little Rock..........	183	65	14	12
California " " Stockton............	326	111	7	4
" " Agnews	201	17	23	2
Napa Insane Asylum...............	697	241	17	14
Connecticut, Hospital for Insane, Middletown.	368	105	34	9
Hartford Retreat................	60	16	3	..
Delaware, State Hospital, Farnhurst..........	267	29	24	..
Illinois, Central Hospital, Jacksonville.........	733	105	15	8
Northern " Elgin..............	466	58	16	2
Southern " Anna...............	436	75	37	8
Eastern " Kankakee...........	1,238	177	55	9
Indiana, Central " Indianapolis.........	664	70	43	6
Northern " Longcliff............	732	66	27	4
Iowa, Hospital for Insane, Mt. Pleasant.........	753	107	19	4
" " Independence......	630	124	34	7
Kansas, State Asylum, Ossawatomie..........	247	71	5	9
" " Topeka...............	526	99	27	8
Louisiana, Asylum for Insane, Jackson.......	178	100	17	7
Maine, Insane Hospital, Augusta............	253	73	5	9
Maryland " " Catonsville (1889)....	94	30	5	2
Mount Hope Retreat...............	299	64	6	3
Massachusetts, Boston Lunatic Hospital... .	210	48	14	1
Worcester " "	436	80	15	9
Worcester Insane Asylum....	45	31	1	1
Taunton Lunatic Hospital.....	331	70	12	3
Danvers " "	386	86	10	1
Northampton Lunatic Hospital.	170	21	11	2
Westborough Insane Hospital.	310	53	8	5
Michigan, Asylum for Insane, Kalamazoo.....	465	98	21	4
Northern Asylum, Traverse City ..	622	67	29	7
Eastern " Pontiac..........	637	98	47	8

TABLE I.—*Continued.*

	Total Admissions.	Total Deaths.	Epileptics Admitted.	Deaths from Epilepsy.
Minnesota, Hospital for Insane, St. Peter	577	110	13	12
2d Hospital for Insane, Rochester	494	118	17	10
Mississippi, State Asylum, Jackson	125	33	9	1
Eastern Asylum, Meridian	76	34	13	6
Missouri, St. Louis Asylum	230	41	14	1
State " No. 1, Fulton	295	88	19	8
Nebraska, State Hospital Asylum	395	51	29	..
Norfolk "	219	20	18	..
New Hampshire, Asylum for Insane, Concord	276	53	7	..
New Jersey, State Lunatic Asylum, Trenton	177	76	6	7
" Asylum, Morris Plains	213	68	2	4
Essex Co. Asylum, Newark	160	36.	3	2
New York, Homœopathic Hospital, Middletown	288	30	5	..
Utica "	507	93	29	1
Binghamton "	104	55	5	5
Willard "	225	123	11	8
Buffalo "	346	42	12	3
Hudson River " Poughkeepsie	407	46	2	3
Asylum for Insane Criminals, Auburn	74	10	23	..
North Dakota, Hospital for Insane, Jamestown	174	28	8	4
North Carolina, Asylum, Raleigh	168	51	7	5
Eastern Asylum, Goldsboro	224	64	17	2
Ohio, Longview Asylum, Carthage	176	58	14	1
Dayton "	196	54	9	5
Columbus "	277	59	6	1
Athens "	229	63	26	1
Toledo " (1889)	510	77	32	5
Oregon, State " Salem	444	67	19	2
Pennsylvania Hospital, Philadelphia	178	27	2	.
State Hospital, Norristown	480	192	23	16
" " Harrisburg	180	70	17	3
" " Danville	580	151	24	16
" " Warren	219	42	12	4
" " Dixmont	256	71	6	4
Philadelphia City Hospital	283	103	14	3
South Dakota Hospital, Yankton	104	17	2	2
South Carolina Lunatic Asylum, Columbus	334	141	40	15
Tennessee, Eastern Asylum, Knoxville	182	39	9	3
Western " Bolivar	284	15	19	..
Texas, State Asylum, Austin	160	24	13	3
North Texas Hospital, Terrell	264	30	12	5
Virginia, Eastern Asylum, Williamsburgh	78	31	5	1
Central " Petersburgh	156	47	3	..
Western " Staunton	125	32	10	1
Vermont, Asylum, Brattleboro	220	79	12	4
Washington, Western Hospital	258	54	10	4
West Virginia Hospital, Weston	455	143	46	23
Wisconsin, State Hospital, Mendota	515	59	32	9
Northern Hospital, Winnebago	758	129	32	5
New Brunswick Provincial Asylum	145	57	5	3
Nova Scotia Hospital for Insane, Halifax	94	22	2	..
	27,865	3,212	1,326	389

I have examined, with reference to this point, all the reports which I have been able to obtain of institutions for the insane in the United States and Canada for the year 1890. I have failed to secure the reports of a few asylums, and in a considerable number of the instances the statistics published failed to give the desired information. Eighty-two institutions furnished statistics in an available form, which I have embodied in the accompanying tables. Table I. includes the admission of epileptics and deaths from epilepsy for the period, whether annual or biennial, covered by the reports, and, for purposes of comparison, the total admissions and deaths for the same period.

It appears that, in these institutions, during the time covered by their reports, 1,326 epileptics were received, and that during the same time 389 deaths occurred from epilepsy, or 29.27 per cent. of the number admitted. During the same period the total number of admissions was 27,865 and the total number of deaths 3,212, or only 11.88 per cent.

Fifteen of these institutions give statistics covering the whole period of their operations. Table II. shows the total admissions, total deaths, admissions for epilepsy and deaths from epilepsy in these institutions, classified according to sex.

TABLE II.

Showing total admissions, total deaths, admissions for epilepsy and deaths from epilepsy in 15 asylums during their periods of operation.

	ADMITTED.			DIED.			EPILEPTICS ADMITTED.			DEATHS FROM EPILEPSY.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M	F.	T.
Connecticut Hosp., Hartford...	2,783	2,506	5.289	612	483	1,095	151	78	229	28	18	46
Minnesota 1st Hosp., St. Peters	3,074	2,324	5,398	525	390	915	148	93	241	58	45	103
Minn. 2d Hosp., Rochester....	1,514	949	2,463	242	138	380	81	34	115	27	17	44
Miss. State Asylum, Jackson..	1,384	1,305	2,689	414	372	786	116	79	195	75	25	100
Iowa Hosp., Mt. Pleasant	4,239	3,110	7,358	806	541	1,347	291	123	414	129	53	182
Binghamton Hosp., New York.	1,108	992	2,100	316	215	531	80	54	134	29	14	43
Hudson River Hosp., New York	2,328	1,928	4,256	421	227	648	137	95	232	24	5	29
Asylum for Insane Criminals Auburn, N. Y.....	658	29	687	104	3	107	15	2	17	5	—	5
Longview Asylum, Ohio.......	3.260	3,043	6,303	773	675	1.448	201	97	298	57	37	94
Dayton Asylum, Ohio..........	3,543	3,326	6,869	574	517	1,091	129	76	205	36	24	60
State Hospital, Warren, Pa....	1,208	1,021	2,229	270	200	470	77	35	112	35	17	52
State Hospital, Danville, Pa....	2,037	1,420	3,457	423	194	617	153	61	214	43	22	65
Central Asylum, Petersburg, Va	1,203	1,126	2,329	295	328	623	79	63	142	18	17	35
Wisconsin State Hosp., Mendota.......	1,873	1,375	3,248	397	322	719	96	41	137	33	21	54
Provincial Asylum, St. Johns, N. B......................	1,144	887	2,031	291	245	536	77	37	114	25	12	37
	31,356	25,350	56,706	6.463	4,850	11,313	1,831	968	2,799	622	327	949

From this table it appears that out of 1,831 admissions of male epileptics, 622, or 33.97 per cent., and of 968 female epileptics 327, or 33.89 per cent., died of epilepsy. The corresponding percentages of deaths to total admissions are 24.04 and 19.93 respectively.

It would appear probable, then, that about one-third of the epileptics admitted to hospitals for the insane in this country die of epilepsy in the asylums, and it is fair to assume that some of those who are cut off by other diseases are saved in that way from death as a result of their chronic trouble. The fact that sufferers from locomotor ataxia, multiple sclerosis, bulbar paralysis and other chronic and fatal diseases, are often cut off by intercurrent disorders is not regarded as affecting the unfavorable prognosis in those diseases. So far as I have had knowledge of the causes of death in the epileptic insane, the mortality from epilepsy has been considerably over 50 per cent. In the Michigan Asylum for the Insane, up to the time of publication of my former paper, out of sixty-two deaths of epileptics thirty-eight resulted from epilepsy. In the Arkansas State Lunatic Asylum the ratio is nearly the same, as will appear from the following table :

TABLE III.

Showing results in 162 cases of epilepsy treated in the Arkansas State Lunatic Asylum.

	Males	Females	Total
Discharged	21	16	37
Died of epilepsy	31	7	38
Died of other diseases	14	13	27
Remain	39	21	60
Total	105	57	162

The above table includes all cases of epilepsy that have been under treatment in this institution since it was opened in the spring of 1883. I have not included among the deaths from epilepsy any cases in which the records show the death to have resulted from accident. I have excluded, for instance, a case in which the cause of death is given as "suffocation," and another in which it is attributed to "œdema of the lungs," because the records do not show the circumstances, although I think it altogether probable that both of them were due to epilepsy.

The tendency of epilepsy to shorten life is further shown by the ages of the epileptic inmates of hospitals for the insane. The mental derangement produced by this disease is usually progressive; recovery and material improvement are rare, and if it had no unfavorable influence on longevity it might naturally be expected that the proportion of middle aged and old people among the epileptic inmates of such institutions would be at least as great as in their general population. Such has not been the case in either of the asylums with which I have been connected. Most of their epileptic inmates have been young people. The following table will show the facts in this respect in regard to this institution.

TABLE IV.

Showing ages attained by 162 epileptics during their residence in the Arkansas State Lunatic Asylum.

AGES.	Discharged.			Died.			Remain.			Total.
	M.	F.	T.	M.	F.	T.	M.	F.	T.	
Under 10 years	1	..	1	..	..	..	..	..	..	1
10 to 20 years	6	6	12	5	6	11	9	3	12	35
20 to 30 "	8	4	12	19	9	28	10	4	14	54
30 to 40 "	3	6	9	11	2	13	12	11	23	45
40 to 50 "	3	..	3	6	3	9	7	3	10	22
50 to 60 "	..	..	..	2	..	2	..	1	1	3
60 to 70 "	..	..	..	2	..	2	..	..	..	2
Total	21	16	37	45	20	65	38	22	60	162

Out of 162 epileptics treated, only 28, or 17.22 per cent. have passed their fortieth year while inmates of the Asylum. Of the 65 who died, 13, or just 20 per cent., attained that age. In the Michigan Asylum the proportion was somewhat larger—58 out of 234 patients treated, or 24.78 per cent., reaching the age of forty or more.

As to the manner of death in the cases which have come under my observation, it has most frequently followed the status epilepticus, but it has not been very uncommon for a few convulsions, or even a single one, of exceptional severity, to leave the patient in a semi-comatose state, from which he never rallied. Œdema of the lungs is rather common after the status epilepticus, when, as sometimes happens, the patient lives for some time after the cessation of convulsions, and in two cases I have known it to come on after a single convulsion and prove rapidly fatal. In several cases there has been, with profound dementia, a gradual physical failure, and the patient has died from exhaustion.

In the majority of cases in which I have had the opportunity to make post-mortem examinations, they have thrown no light on the immediate cause of death. In one case a cerebral hæmorrhage, occurring in a convulsion, proved fatal. In two cases, in which the patients lay semi-comatose for several days after convulsions, I found lobular pneumonia, which may have contributed to the fatal result. Œdema of the lungs, as already mentioned, has been present in several instances.

Enough has been said to show that epilepsy, as it occurs in hospitals for the insane in this country, is a disease of very serious prognosis. The question becomes of interest, whether this condition of affairs is confined to those institutions, or whether the general opinion hitherto held in regard to this subject is a mistaken one. I have never seen any attempt to treat the matter statistically, except my own previous article. Hospitals for the insane present the advantage, in this respect, of containing a large body of epileptics in regard to whom definite information can be had, but it is probable that the cases there collected are, as a class, of more than average severity. Still, in a large proportion of those that I have seen, the convulsions have not been remarkably frequent nor very severe. The mental disturbance does not bear any very constant proportion to the severity of the disease in other respects, and it seems to me improbable that all the difference between the facts that I have collected and the views of writers on the subject can be accounted for by anything in the character of the cases. At all events, I think it is incumbent on those who hold that the risk to life from epilepsy is small, to support their belief by something more than bare assertions. Many things may prevent a physician in private or dispensary practice from knowing what becomes of his epileptic patients, but until he knows of what they die, it seems to me, in view of the facts here presented, that he should be cautious in asserting that they do not die of epilepsy.

THE ALTERATIONS FOUND IN THE PERIPHERAL NERVES OF PROGRESSIVE GENERAL PARALYSIS.

The histo-pathological changes occurring in the peripheral and intra-muscular nerves, and to a greater degree in the trunks of the cranial and spinal nerves, consist of a parenchymatous neuritis of peripheral origin. In the various spinal nerves—motor, sensory and mixed—not only are the trophic centres normal, but the anterior roots, and that portion of the posterior roots between the post-spinal ganglia and the junction with corresponding anterior roots, are likewise normal.

2. The intensity of the alterations is in direct ratio to the distance from the nerve centres.

3. The different etiological factors (alcoholism, syphilis, etc.), and to the various complications (tuberculosis, etc.), must be attributed in all probability the unequal distribution of the lesions, as found in the muscular and cutaneous nerves. How much of these alterations depend upon progressive paralysis and to the various complications is very difficult to determine.

4. The existence of these simple and degenerative atrophies of the peripheral nervous system is constant. The mode of origin is unknown. From the fact that the nerve endings are in advanced stages of degeneration, while the nerve centres and the adjacent nerve roots are unimpaired, it is most probable that the lesion is comparable to an ascending neuritis, beginning at the periphery and ascending centrally.—(Dott. Roselino Colelia in Annali di Neorologio. Fas. II, IV, 1891.) W. C. K.

TRIPLE PERSONALITY.[1]

By IRVING C. ROSSE, A.M., M.D., F.R.G.S.,

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SINCE occupying myself with this paper I have noticed that variations of personality seem to have interested both the psychologist and physician. Several recent contributions, mostly French, have appeared relating to the so-called diseases of personality, and I find myself anticipated in much that I would otherwise have said. The subject has been touched upon in "Shadows Around Us," and in "Linked to the Past," while triple individuality has called forth a facetious little volume under the title of "I, Me, and Him."

Most of the reported cases in which the normal unity of the consciousness is broken appear to be states of double consciousness, doubling of the personality, or of periodic asynesia,[2] and I find conspicuous by their absence the mention of cases in which these oppositions or scissions in the ego have taken on a triple character.

Without attempting a definition of the convenient abstraction known as personality, I shall assume that, being a consensus or a composite of complex character, it follows that its disturbances are multiform. We are not bound to the number two in considering the mass of conscious, subconscious and unconscious states that may succeed one another in our body. To whom has it not happened, in studying the metamorphosis of his psychic individuality, that it raises, lowers, or stays at a level; or, in other words, that at one time he experiences exuberant vitality, at another depression, and again the normal state or usual tone of life known as euphory?

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[1] Read at the meeting of The American Neurological Association, at Washington, September 22, 23 and 24, 1891.

[2] See writer's article, "Memory, Disorders of," in Reference Handbook of the Medical Sciences.

Experience, moreover, shows that the variable elements making up personality may often lead us to hesitate between three decisions. To whom, for instance, has it not happened to travel in one direction, or the opposite, or to stay at home? To whom has it not occurred many times in life to act in presence of three different circumstances, each one of which necessarily excludes the other two?

Many of us know of mental disintegration in certain hysterical persons, of the lack of fusion in the psychic life of spiritualistic mediums and somnambulists; and hypnotism reveals the fact that subjects exist in whom is an intelligence other than that of the normal psychic individual acting by the side of this ego without its being in any way opposed. For instance, in the creation of artificial personality by hypnotism, experiment may show, first, a lethargic state, characterized by neuro-muscular excitability; a second cataleptic state, produced by raising the eyelids; and a third, a somnambulic one, caused by pressure on the vertex. If during the cataleptic state the right eyelid is lowered, the left brain is acted upon and a lethargic state of the right side only is brought about, the subject becoming hemi-lethargic on the right and hemi-cataleptic on the left.

The existence of triple variations runs through so many things in our experience, both familiar and clinical, that an interesting enumeration of them might be made. For example, it is not a psychic curiosity to hear three different opinions expressed by any two Germans that one overhears in animated conversation. We have triplets occasionally, although obstetricians tell us that it occurs but once in five thousand births. We have been taught much about the tripod of life—the three great functions, circulation, respiration, and the nervous system, and of the three ways in which death occurs, namely, by syncope, asphyxia, and coma. We consider the intellect, sensibility, and will in studying phenomena of the normal mind, and as neurologists we observe in our patients the sensory, motor, and mental symptoms which, by the way, can only be studied as subjective, objective, and ejective. The prevalence of the number three in accounts of abnormal phenomena may be partly accounted for by literary or religious associations. However, it need scarcely be said that this triple point of view is not confined to the matters in question. Sociologically speaking, every man is what he conceives himself to be, what his neighbors conceive him to be, and what he really is. The "Autocrat of the Breakfast Table" has adopted the theory of triple personality, which he has so entertainingly developed in the "Three Johns," and Adam Lyttleton, in one of his sermons, asserts that every man is made of three *Egos* and has three selfs in him. Coëxistent personalities are also known to occur in dreams. The attitude of the ego may take on several shapes during uneasy sleep, when a medical man, for instance, becomes several personalities, one or both die, and he, as the survivor, makes the necropsy. Everybody knows the place that the doctrine of the Trinity holds in theology. As a factor it is known to lend color to mental disturbances, since individuals suffering from disordered memory or from inhibited activity of the higher volitional powers have believed themselves to be triple. Esquirol tells of a priest who, having applied his mind too ardently to the service of the Holy Trinity, finished by seeing around him triple objects ; feigned himself to be three persons, and wished that he be served at table three covers, three dishes and three plates.

To confine myself to concrete facts and authentic observations that have come within the range of personal experience, I may mention several instances in which the illusive transformation assumed a triple character.

A single woman, of thirty-two, from the South, had been heroically dosed with calomel and quinia for malaria, and on reaching Washington had undergone a course at Dr. Hammond's Sanitarium, where bromides, hypnotism, and other things had been tried. During the seven weeks that she was under my treatment I noticed hystero-catalepsy with melancholia, beatific visions, and occasional insomnia. There was no appreciable uterine trouble ; appetite fair, bowels regular, and she seemed rational on all subjects, until shortly before quitting me, when in a fit of despair she related the whole story of her persecution and ill-health, which she alleged had been brought about by a "Vadoux" spell cast on her a few years since by a negro man. She supplemented her own case by mentioning a number of others that she knew of. One of the peculiarities of this case was triple vision, although there were no appreciable intra-ocular changes, as the eyes were examined by a competent ophthalmologist, Dr. Burnett, who reported the eye grounds normal. This patient died insane at an institution near Baltimore.

The next case was that of a woman of sixty-eight, who for some years had suffered from paretic tremor. A week before death she had triple vision; but in this instance there was opacity of the right crystalline lens.

I have now under treatment a patient suffering from the effects of an occlusion of one of the cerebral arteries. When taken ill some months ago he was in the street near the Riggs House, of this city, and on looking up at that building distinctly saw three of the kind piled up one on top of the other. This illusion has now disappeared under specific treatment.

In an insane patient, a middle-aged man, lately under my observation, there was an illusive transformation of the auditory function. This man heard three distinct voices, one of which talked to him in a loud tone; the other spoke at a distance with a hissing sound like escaping steam, while the third was a wee, small voice or a microphonic whisper.

But the most extraordinary case of these triple delusions—one in fact that inspired this paper—came under my notice some time since in the person of a marine who was discharged the service in May, 1890, on account of insanity. I found this man extremely voluble in speech, and had no trouble in getting him to explain his triple personality, which, in addition to himself, consisted of a "young man" and "Lucifer." The annexed history is from himself and other sources:

M. L., æt. thirty-five years; brasier; single; nativity, Connecticut; education, common school; religion, Roman Catholic.

No appreciable sign of physical ill-health; but head brachycephalic and suggestive of hydrocephalus. Pupillary reflexes normal.

Oldest of seven children, all living and healthy, except two deceased sisters, one of whom died at twenty-eight years, feeble-minded and very religiously inclined. Father, who died four years ago—cause unknown,—was a drunkard.

Otherwise the patient has no hereditary or atavistic antecedents of note. His habits, from earliest manhood, have been of a kind that it would be charitable to designate simply as irregular. Alcoholic, nicotinic, and venereal excesses have been followed by persistent masturbation and constant erotic tendency.

M. L. had chicken pox at seven and scarlet fever at nine years ; otherwise of good health, except occasional biliousness and mental depression.

Nothing unusual occurred in his life until about 1884, when he got to drinking, became nervous, sleepless, and finally had *mania a potu*, with a series of epileptiform convulsions. His physicians prescribed more whiskey and a hypodermic of morphia, which did not quiet him altogether, and while lying on the bed a "picture form" appeared on the wall and gradually assumed the semblance of Lucifer, whose voice issued forth, saying : "Who has half of your blood ? God or the Devil ?" [the beginning of the delusional state as near as can be ascertained]. Leaping from bed he ran to a priest's house for protection from the Evil One. Subsequently was sent to a private asylum for four weeks ; afterwards under asylum treatment on three different occasions, about three years in all,finally escaping, and getting drunk was arrested for using profane language on the street, and spent four weeks in jail. Regaining his liberty, worked as a porter, Lucifer still pursuing him, but not so troublesome as formerly. On speaking to a priest about the delusion, the patient was advised to stop drink. Shortly after, went to New York, where he kept up his bad habits. At length returned to his home in Connecticut, insulted his mother, sister, and a young woman visitor, owing to which erotic conduct he was compelled to quit the paternal roof, ultimately bringing up in Boston, where he enlisted in the Marine Corps. This last act was voluntary and not the outcome of Lucifer's instigations, as were the preceding acts, especially those of a criminal or sinful nature ; but when asked by the examining officer if there had ever been anything the matter with him that would tend to disqualify him for military service, Lucifer spoke up and said, "No !" After enlisting he kept up his bad habits. He was transferred to Washington, where his erotic habits and eccentric conduct, particularly his speaking aloud to himself and gesticulating wildly while communing with Lucifer, attracted the attention of officers and men, and led to his being sent to hospital.

M. L. speaks of himself as an innocent person who is controlled by a spirit whom he calls "the young man," and who in his turn is under the influence of Lucifer, or at any rate is engaged in a continual struggle with the latter for supremacy in controlling the actions of L. The "young man" abuses himself sexually at times, but L. is not responsible for these actions. He does not see Lucifer, but hears him talking and roaring like a lion when opposed and angered. Lucifer tells him to kill the writer or other person finding out L.'s business, but he resists that advice.

The patient is generally well conducted, and when not assisting at work about the ward will go to a secluded place, where he can be heard upbraiding Lucifer in a loud tone for attempting to control his speech and actions against his will and tempting him to do things that he knows to be improper. The patient dwells a great deal on the importance of religious duties; earnestly wishes to comply with the rules of the Church, and firmly believes that Lucifer can be expelled or cast out by a species of exorcism.

Patient's memory is fair as regards dates, but he is indifferent to surroundings and to recent occurrences, political or other; knew when Mr. Cleveland was President; don't know who is now, and don't care, his only concern being to get his first personality out of trouble, as he feels that he has to answer to God for being the cause of them. For the past six years he has been in league with Lucifer to "down" L., but for the last six months he has endeavored to give up his dealings with Lucifer and to assist L. to return to God. He, as the "young man," wants to become L.'s good angel. Formerly he was L.'s bad angel or evil counsellor, owing to some sinful act, which placed him in Lucifer's power. At each attempt to emancipate himself from the power of Lucifer the latter tantalizes him in every conceivable way. He says Lucifer is afraid of God, but tries to bluff L. into the belief that God does not know and see all things. The patient keeps religious souvenirs about him, which displease Lucifer and induce "kicking" on his part.

In this case the condition has remained nearly the same, with the exception of about three months of comparative inactivity of delusion nine months ago, since which time gradual impairment of the faculties has left the patient in a state of dementia.

THE EVOLUTION OF PARANOIA—REPORT OF A CASE.[1]

By WALTER CHANNING, M.D.,

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THE subject of this sketch, Miss A., is a young woman, thirty-five years of age. No heredity of insanity is given in her family history, but her mother was of a nervous temperament, peculiar in some of her ways, and died when her daughter was thirteen years of age. Her father is also of a nervous temperament.

Her appearance is unusual, in which she says she closely resembles her mother. Though she is a little above the average height, ninety-five pounds is a good weight for her, and sometimes she goes down to eighty pounds without any special ill effects. She has large feet, hands, mouth and ears, and irregular teeth, largely decayed.

Her chin is small and narrow, the alveolar diameter lessened, as well as the smallest diameter of the skull, that between the temporal lines. The posterior portion of the skull is much too large for the face, looking posteriorly hypo-brachycephalic.

Altogether, her head looks like that of a fœtus which had been unduly compressed laterally, and the face portion seems never to have advanced in development. The expression of the face is lacking in strength, but is hardly what we would call infantile, having rather the antiquated and supernaturally grave look of some new-born babies, or some double and twisted old maids.

It is not to be inferred from the above that Miss A. was especially stupid as a child, owing to arrested cerebral development. On the contrary, she was a fairly bright child, learning what she chose without much difficulty, but she says she never learned anything thoroughly. She was an only child, allowed to do as she pleased, and it was natural to her not to persist in doing any kind of work. To gratify ier wishes .for variety, however, she would surmount all bstacles.

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[1] Presented to the American Neurological Association, at the Annual Meeting, held in Washington, September 22, 23 and 24, 1891.

Her first definite recollections of herself go back to the ge of eight, a period which she regards as an important ne, for no reason except that at that time she first remem- ers indulging in introspective analysis of her feelings. She ien adopted a standard of what she regarded as her normal hysical and mental health, which she has more or less ad- ered to since. Before she can give an answer as to her eneral condition she is obliged to go back and remember what she was at eight, otherwise she can give no idea at all.

From the age of fifteen her peculiarities have been more pronounced. She has spent much time alone, caring to associate neither with children nor adults. She has read some books and done fancy work, but otherwise when alone has been unoccupied except with her thoughts. Some of the time she has been restless, moving around from one place to another without assigning any definite reason.

Several years ago she became more eccentric and inclined to go contrary to her parents' wishes, and it was necessary to place her under restraint for three months, when she got tired of it, and, as usual, had her own way, and left the private asylum where she was, against the physician's advice.

Since this time she has been under the care of Dr. Weir Mitchell, who only injured her by "stuffing" her, she says, and she has also been at various institutions. Between November, 1889, and June, 1890, she was at a sanitarium four times, going there without her parents' knowledge, on at least one occasion, and running away from there in the middle of the night one of the times.

She says she left the sanitarium because she could not sleep—"she never can stay in a place if she cannot sleep—want of sleep makes her confused." She was also dissatisfied with her experience at this place because "Mrs. J. was untrue to herself, and the *influence over her mind* made her bend to her will, although she protested. I told her," Miss A. says, "I would go to Mrs. J., and she said if I did it would only be called imaginative."

When Miss A. first came into my office I was struck by her quiet, self-possessed manner, which was in marked contrast to the agitation of her stepmother, who accompanied her, and evidently was affected by the idea of placing her daughter in the hands of strangers.

In the most natural way possible, Miss A. told her mother she would explain the circumstances of her coming here. Then she went on to say she could not sleep and could never stay anywhere unless she could get rest and sleep. "Her great trouble," she said, "was that she was not practical in what she wanted to do for herself. She could be practical for other people, but when she tried to do anything for herself she always failed. The trouble was she could not *connect*." She would often almost come to a decision, and then fail. Often she thought she took too much food ; then she would take very little, hoping to see matters clearer. After that she would be obliged to build up for a while. So she was usually going through the alternate processes of starving herself or taking considerable food. One process seemed to be the inevitable reaction from the other. The eating period would represent the clearer mental phase, but soon confusion, indecision, doubt, would arise, and she would stop eating and go to bed, hoping thereby to see more clearly and decide on the best course of action. She tried meat three times a day, then no meat; coffee, then no coffee; milk, then no milk. On the whole, though her father ate meat three times a day, and she had been brought up to do so, she thought a vegetable diet, and the less food the better, the wisest plan.

She was very doubtful if she had ever seen anyone who understood her treatment, and thought the food and drugs and baths at the sanitarium were not the right things for her, though they might do well enough for other people.

When pressed to give some explanation of what she wanted to decide on, she could not do so, but said she was very unlike other people and supposed she would never be any different ; but she could not see matters as others did, "she could not connect," to use her common and favorite expression, and she wanted to get a little rest and sleep a w nights, then perhaps she could see clearer. There were lso matters in her past life which she wanted to explain to erself, as she was at present uncertain about them. She ow wanted to be guided and directed and get help from thers.

The above ideas, and others of a similar tenor, were uietly and connectedly detailed. She was neither excited or downcast in her manner of talking, but expressed herelf in a prosaic and methodical manner, as if doubt and ncertainty and constant searching for light on the cause f her "failure to connect" were habitual to her.

In her mental organization a habit of precision and exctness showed itself, but its whole force was apparently irected towards the solving of the problem which she had ever been able to explain to herself and no one else could xplain to her.

By her quiet manner, natural reticence, and knowledge at in some way she was unlike others, in spite of her irraonal ideas, she had been able to conceal her true self from e world at large, and she had acquired a habit of acting part which was in reality totally unlike her true self, and was evident that her strange acts, which seemed like mple eccentricities to most people, really were a result of r erroneous ideas.

After being under treatment for two weeks she had imoved, sleeping and eating well and gaining in weight. e then said she had eaten rather too much the week fore, which had led to prevarication, and that had led to w complications in her knowledge of herself. "She now alized she had her consciousness, and yet that was not a rt of herself. She always thought she could do anything herself, but when she had tried she had failed. She had ver had anything to do with other people, and therefore uld not understand them. She could not make herself derstood, and therefore could not understand others. e could tell at once whether she liked a person and ether she understood persons; sometimes more impresn was made on her mind by silence than if she had been ked to for an hour."

Being apparently at this time in a fairly cheerful state of mind, though not as well as she was later, she wrote the first of a series of letters, which she sent often, sometimes twice daily, to the office. Frequently these letters had not the slightest possible connection with anything said or done, yet they undoubtedly gave expression to some one or more of the ideas in the jumbled mass which passed persistently through her mind.

Each letter was written with great care, always beginning and ending in the same manner. The i's were all dotted and the t's crossed; the letters were well formed and the lines unusually straight. One would have said, in glancing at the letters, that they were written by a very methodical person, accustomed to expressing herself in a clear, exact and concise manner.

There certainly was in them an unusual degree of uniformity, much as if they had been turned out of a machine. This would apply almost as well to the contents as to the typography, for there was a systematic attempt apparent in them to express what was evidently constantly present in the writer's mind, and which she took for granted was also plain to the reader's mind.

The assumption seemed to be, " we both understand the subject about which I write, but I want to write you exactly what I think about it."

Such might be the assumption, but it was very far from the truth, for study the patient as closely as I might, she would never in her conversation explain the foundation of her beliefs or the ideas set forth in her letters. While the thoughts seemed to flow along quite connectedly in her mind she lacked the power sometimes, probably, to convey her meaning in words; then again, as further knowledge of her revealed, she thought she could read or understand the mind of the person talking to her, and if the person understood her, he in turn could understand much of what was in her mind without a full explanation. This idea, while not quite amounting to a developed delusion, perhaps, as it may have been only an exaggeration of what many people think, still led to many of the complications of a delusive belief.

Her conversation would have twists and turns impossible to follow; anger would show itself when the wrong reply was made, and our relations would become, to say the least, *strained*, when I attempted to follow up a clue.

There was the further difficulty also that she was sometimes in an overwhelming state of doubt, hoping to come o a decision about all the things which had always hope-essly puzzled her, until she had lost any clear comprehension of what they were. While in this state, expecting me o understand it by reading her mind or knowing her hought, if not outwardly expressed, or what was nearly as bad, her letters, she would grow discouraged and lose faith in me, as she had in all other persons in the world with whom she had been associated.

Two weeks after coming under treatment she wrote to my assistant: "I supposed you had given up all thought of being able to help me and only waited until I should see it and be able to travel. . . . I wish I had been clear-headed to have done whatever was right, but I am not sure where my mistake was." She was doing well at this time, and nothing had apparently happened to lead to the writing of such a letter.

Shortly after she wrote: "I know I have gone wrong nd against your advice (she had not, to my knowledge). . . I only found it out by what I heard other people ay. . . . I understand something about the way you dvise, but not clearly yet. I should have to ask you bout it. I do not understand as much as you think I o. I am so stupid about it all. I believe it would be just well for me to be under a nurse whose guidance I could llow in all things. I will not worry, but I wanted you to now, and I can write clearly although I do not talk early."

In this letter she wishes to have some one who shall act a guide, a favorite idea with her *in theory*. She also ex-ended it further, and wished me to suggest some one in he house whose example and actions she could exactly imitate. She tried several times to imitate persons, and could not do some things without consulting these persons; but she soon gave up any individual as a failure.

In her next letter, written two weeks after, she says: "I thought that perhaps there might be some hope of success for me if I were to tell you my difficulty and the thoughts that influence me when the hardest time comes, and there seems nothing to hold to in my thoughts—if some one would help me to remember, when I grow confused, what I see clearly when I am calmer. I thought you would tell Dr. K., for you both of you understand so little of what worries me when I grow confused. . . . I would write it if necessary, I suppose; but I should not wish it repeated."

Again she writes, ten days later: "I know it would be better and wiser for me to copy Dr. K., and it is the only way that would do me any good. I have tried, but I get confused and cannot make myself do as I ought. Sometimes I am afraid, and other times confused. There is no use in my trying any other way, so I might as well go home now. If you cannot see it differently, I think best to tell you of what influences my mind strongly."

The same day she writes, in another letter: "Before I was ten years old, on coming home from a revival meeting, I remember thinking I was different from other people, and if Christ were on earth he would help me. I had none but superficial thoughts until after I was sixteen, then I realized how different I was from others, and decided certain things about my future life for myself. Then there came to me ideas that I have learned about in the past six months, but as I had neither read nor talked about them I do not see how they can help having been original." She then narrates a love affair which ended in both persons being convinced it was best to live apart. She goes on to say that "from experiences she has had before and since that time she has believed that her mind belonged to him (her lover) in a certain way, to help him in his work. Now I believe it belongs to me, and I ought to believe in nothing that keeps me from doing exactly as you want me to. I should really harm instead of help his work. . . . Some of my experiences have had in them what I cannot believe are illusions. I have had illusions, and believed them to be illusions afterward. . . . You and Dr. K. know how difficult it is to get over vivid impressions, especially when one cannot explain them."

She means here impressions made in connection with her love affair years before. These impressions come now into her mind and influence her judgment in matters which have no logical connection with them, somewhat as her standard of her physical health formed at eight years of age has to be considered and allowed to exert its influence before she can answer questions as to the condition of her general health.

Between the letter last quoted from and the next one to which I shall refer, a period of about a month ensued, during which she was at her best. She never forgot her struggles and failures "to connect," but thought she at last saw a little light, and in consequence she was able to try experimentally the indicated treatment.

She took her food well, went to the table and sat all through the meals; walked, drove, played tennis, croquet, games in the parlor, etc. All these things she did cheerfully and conscientiously, carrying out any directions to the letter. But all the time she seemed very much like a wound-up dummy, and occasionally would require a little rest or "time off." She acted very much as if it was not *she, herself*, that was going through the routine, but a secondary self she was putting forward, and intently watching, with the hope that *she, herself*, the true *ego*, might be able to do likewise if the experiment proved successful, the presumption being that it would be a failure.

At this time she was full of gratitude for the kindness, sympathy and help she was receiving from her physician, sentiments which were later to pass through a dense menstruum of gall and wormwood, not to entirely disappear for a long period, but to temporarily be overshadowed and turned into enmity or entire disapproval, all without any change in the external and non-understandable circumstances.

There were times when, within an hour, without any perceptible objective cause, she would pass quietly, and without an apparent mental ripple, from a feeling of confidence and esteem to one of vituperation and abuse, and all expressed so naturally and simply and definitely as almost to make it appear that such was a logical and normal process of reasoning.

During this *best period* she wrote very few letters to me, as her mind was more than usually occupied with matters outside of herself, and she felt clear enough to talk; but when she began to lose the thread again, the letters were resumed. During the first part of the time she would become suddenly confused, for instance, getting up from a game of cards, saying she could not see, and pressing her hands to her temples. Then, perhaps, she would see flashes of light, then matters would become mentally confused, and she would have a wild, far-away expression, with motionless eyelids, as if she were trying to see some distant object.

Now she wrote: "I believe you are mistaken in your conclusions concerning me (I had never stated any conclusions to her, except that I thought she had improved and might get much better). Some of the things you think I know are not true. . . . The truth is I am not sure what I believe. I have been trying to find out. If you are sure and will tell me how I can be sure, I will do all I can. It seemed to me that I could not go on until I was sure. I am sorry not to be quicker, but my mind does not settle, although I think more clearly this morning."

The next letter is an illustration of her supposed power of seeing or reading or understanding another person's thoughts, even when that person was not present. It might, perhaps, be attributed to false hearing in this instance, where she received a command from an absent person to perform a given act. But as she habitually felt that she knew what was in the minds of certain persons with whom she might be for the moment in sympathy, the present instance seemed one of the same kind.

Professor James[1] refers to a somewnat similar phenomenon when he says: "Most of the voices which people hear (whether they give rise to delusions or not) are pseudo-hallucinations. They are described as '*inner*' voices, although their character is entirely unlike the inner speech of the subject with himself. . . . They are a very common incident of delusional insanity, and at last grow into vivid hallucination." In this case there probably were pseudo-hallucinations of hearing associated with the delusional idea that she could see or read what was in some persons' minds. It will be noticed she says, "I thought that you thought."

The letter was as follows: "On Saturday afternoon I hought you thought I ought to play croquet (I was thirty miles away), so I began, but could not go on, because it eemed as if you were definitely forbidding me to do so y *influencing my mind* (the nurses reported that she stopped playing croquet, because Dr. Channing did not want her to do so). I often see your thought as I go about, but if it is not in accord with what you have bidden me to do, it does not stop or confuse me. But this time it was different, and I *could* not go on. Please tell me if I did right to stop. . . . I was glad you and Dr. K. knew I would obey when I could. I was happier than I ever expected to be, because I could obey the highest influence, and the consciousness that came to me with the thought, 'I shall be satisfied when I awake in Thy likeness.' Last week I thought I was going in a direction you had forbidden, and later I was so overwhelmed with the thought I might harm you that I could not realize and be ready to obey. I have known many times that God spoke to me, or sent me help, and I tried to obey."

In this letter she mentions "*my directly influencing her mind.*" As will be seen later, this idea of being influenced showed itself in other ways, some of them of importance, and was so persistent and wide-reaching in its consequences that it may perhaps be classed as a systematized delusion. Such an explanation will help to clear up much of the vagueness and haziness of Miss A.'s letters and conversations. This influence she must have supposed exerted with good motives, or malice aforethought, intentionally by the person, which would also help to explain the vagueness and haziness.

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[1] Psychology, vol. ii.

In her next letter she says: "I came so near succeeding, and if I had only known I need not fear growing softheaded and getting into Dr. K.'s way of thinking; I should have done as I wanted to. . . . I think I see better with my eyes bandaged, and if I could have had one half-hour's calm like that day at the seashore, I think I should have succeeded."

She then goes on to relate an episode with a cousin, who would put his arms on her chair and try to kiss her. She finally grew afraid and prayed about it, and he never troubled her again. "Years afterward," she wrote, "when I came to life, I was not conscious that my womanhood had been touched before."

Speaking in another letter of her day at the seashore: "I did not prevaricate but once while there. I want to thank you for two perfect days. It was the reality of what I dreamed years ago." She speaks of several cases of indecision during the day, but says she has since spoken out fearlessly.

In her next three letters she is responding to the thought she has seen or read in my mind, and not at all to anything said to her: "I could hear distinctly, but I could see nothing after supper except my mistakes, afterward. . . . I am quite willing to do whatever you choose to have me do, but you are thoroughly mistaken in what you think. . . . I see you must go on thinking as you do. I have given you an impression I cannot change; still, I am right. I am capable, and do care in as high a way as you thought. I have always had a white mind. Please try not to think it of me; it is not true. (I had, of course, no idea to what she referred). "Before I grow confused, I want to ask you something. If ever, in the future, I am really unselfish, may I come back here and report myself to you? I believe I am one of your people, and some time I may be able to prove it."

In another letter she says: "Often I have not been able to understand what my conscience decided, or rather, it seemed to decide nothing. I do not feel as if I were intelligent, and I do not understand what I ought to do. . . . If you say I made a mistake on Saturday and know all I need, I shall be satisfied." . . . Again she says: "If I had been untrue, really, do you think I could, years ago, have heard that call, to think of others, that all true lovers hear?"

In another letter she says: "I could read and use in part what I read the first evening (this must have alluded to what she read in my mind), but nothing reached my brain clearly enough to use. The next morning came the consciousness that I was living superficially, and my heart did not really lead. I tried to lift it, that it might control; but the weight seemed too heavy for me. The consciousness of failure took all the courage from me and all effort seemed useless and in the wrong direction. . . . I know that my first mistake must have been long before, but I do not yet see where I expected to succeed."

From about the date of this letter to the day of her discharge she began to be very irritable, fault-finding and abusive in her conversation. She had always been, in fact, prone to express herself in rather rough and sometimes coarse language, in marked contrast to the habitually pleasant and refined manner of writing.

She had now decided that she had made an effort, and it had failed, as always before, though nothing, to my knowledge, had changed a particle from the time she was enjoying herself most. She decided, however, to make one more effort, which she described as follows: "I decided to go by what I understood you to mean when you came to see me in the morning. To obey you in spirit, fitting myself into what *I* thought you meant me to do. I felt capable of doing so, if only I could keep far enough away from people to keep my thought clear enough to guide me to fit in. I understood your plan and tried to brace myself to keep strong." She goes on to say that everything went smoothly until she was told to do something in such a decided and loud manner, and by so many people, that it upset her nerves and confused her and made her "literal." "I was lost from that time, although I went on in the land of shadows. I could see dimly the intimations of the spirit, and I would try to follow, although I was held back, as in a vise, from seeing clearly enough to understand. I felt as if I were charmed by a rattlesnake."

The next day, though not as well as usual, it seemed to her that she ought to go to the theatre. Once she gave it up, but the strain was so great that she felt it would be right for her to go and sacrifice herself, and that might be what I meant. "Perhaps," she wrote, "you saw I was too weak to hold my own and thought best for me to yield before Mrs. C. should be further drawn in (what she means here is not very clear, except that she felt her inability to do as I directed would result in harm to me and indirectly in harm to Mrs. C.). . . . As soon as I was inside (the theatre) I heard[1] that I had listened to the wrong influence, and although I had known it before I realized what awful trouble I had got into and could not get out of. The horror came closer and closer, and I cried to you to take me out of the uncleanness. . . . I thought I knew the saddest of experiences, but that seemed little, only ill-health. I would have been glad to kill myself, and all night long afterward I lived it over and over. . . . . I do not feel that I shall ever be clean in my own thought again, for I feel I have lost my womanhood. . . . It makes me faint even to look at Dr. K., and to remember I have been false to my convictions and turned from the only way I can think clear."

This and a previous reference to the young man's attempting to kiss her are the only references to any erotic ideas coming into her mind. She appeared to be free from concrete erotic tendencies.

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[1] This seems again like an hallucination of hearing, but appears to me to be again a pseudo-hallucination. She again *saw* my thought, rather than heard it expressed in articulate language. She meant heard in the sense of a thing being communicated in a general way.

In her next letters she is beginning to get more discouraged. She writes: "I should be sent away before I do any more harm, or at least until I am able to keep my thoughts in the present when I am with people. I have the real thought when I am alone, but cannot hold it when I am with people. . . . I fear I shall be all crooked unless I understand just what you want me to do. . . . I have had my way of looking at life ever since I was sixteen. It is my own, and not studied. I see no reason for degrading myself by submitting to what I do not believe in and putting my mind under an inferior mind, and I shall resist it. Why should I not keep my mind as it was made in me? God does not call people to degrade themselves. I suppose I had an unawakened heart and am not yet sure of the opposite. But even if it were true I see no reason I should do what I know is unclean, and degrade my mind. I am sorry to give you trouble, but let me go home."

The next day she wrote a letter, giving up her own way, adopting what she thought mine, and ended the letter by saying: "You will excuse me if I get confused, but I shall always aim in the direction I say now." (That of doing as requested.)

But the following day she again lost faith in herself. She wrote: "I can do nothing more without a vacation and physical rest. You know I do not want to harm you, but how can I help it unless you let me go. . . . Some day you will know I am not faithless, . . . but I simply can endure no more, the pain is so much worse than before."

This letter was the last she wrote before her discharge, partly because I was away some of the time. She grew more discouraged and discontented, and gave up the task as hopeless. She ate almost nothing, reducing her weight to eighty pounds, and did not sleep well. Her time was now occupied with writing letters to her father, telling him she was totally worn out and beseeching him to take her away.

Instead now of expressing her gratitude and unbounded confidence in myself, as she had done in many of her letters, she talked in this way: "Not much of the Channing blood in Dr. C.—the William Ellery Channing, I mean. Look at the mild sermons he wrote. Look at the sermon on slavery. All Dr. C. cares about is to make people bow down to him, and if they don't, then he puts on the screws. I would rather get worse than have anything more to do with Dr. C. It is all very well to keep still when a man wants to cure you; when he wants to make a slave of you, then it is time to speak. If he carries it out on me he will hear from me in the future, I warrant you. Let him remember what Emerson says, 'that no human being has a friend to spare.' It is all very well when a person does his way—he is all sweetness; but let them think differently, and he is just the opposite. He laughs over other people's disasters."

While in this state of mind she was removed by her father.

Shortly after leaving my care she sent me one of her carefully written letters, saying her father thought he could build her up faster at home, and so decided to take her there. "I think it was the best course, and believe you will see it so some day. *I am grateful* for your efforts in my behalf, and wish they might have been more successful."

Two weeks later she wrote: "I am convinced that I was wrong and unreasonable in leaving Brookline, and I want to go back. After having rested I see things differently, and heartily beg your pardon. . . . Back of all was a belief I had no right to *let you influence* my practical living, but I did not see my duty as I do now. My surroundings will not let me do good work. I cannot get on with Dr. B.; his mind does not go in the direction in which anything I said could really influence him. . . . I do not think his tastes are artistic, and he does not really like me. . . . To tell you my deepest thoughts, I feared that if I went back to Brookline I might be more untrue, weak and childish than I had been, and I did not like the thought of disgracing myself more there. I did not see it clearly as I do now. Please forgive me; there is good in me, and I think at times my mind has been affected, or perhaps it was only disordered imagination."

A few days later she wrote: "Last week for two hours I knew what it was to be happy. I knew the spirit of truth as you expected me to, but afterwards, when I went among people, I grew irritable and could not hold to my thought. When talking with Dr. B. the experience was in my mind, but I did not care to talk of it before him."

While she was writing these letters, which came to me with special delivery stamps, and which I briefly answered, saying I forgave her and she would be welcome in Brookline, I knew that she thought of placing herself under my care in her vague, doubting way. To remove some of her doubts about my forgiveness, I wrote a letter to Dr. B. at his request, saying "all was forgiven," etc., which he desired to show her.

Then a telegram from her father came, asking if she was with me. Finally, early one morning, I was told she was in the street, walking up and down, and not willing to come in until I had seen her. This I did at once. She greeted me pleasantly, came in, and seemed glad to get back to her old quarters.

She said she had eaten nothing for twenty-four hours, and had not slept, and her appearance gave ample evidence of the truth of her assertion.

It appeared that, three days before coming to me, she had gone to bed in apparently good spirits at ten o'clock. The next morning her door was found locked, and on it a notice that she had gone to Boston. Thus the telegram I received was explained, her father thinking she might be in Brookline.

As a matter of fact, she did go to Boston, wandered around in the parks a few hours, and took an evening train back to New York, not having courage or decision enough to go to Brookline, which was her original intention.

The day she finally left New York, which was the same day she had returned, she started her stepmother off in a hurry in the evening. They did not dare to wait until the next day, fearing she might change her mind.

To return to her arrival in Brookline. She took a good breakfast, and immediately after began to doubt whether she had better remain. To decide the matter she proposed to go into Boston, go to bed in a hotel, and then, after resting a few hours, when her mind would be clear, decide what she had better do.

Two hours of discussion were fruitless in convincing her of the unreasonableness of such a course. She declared she could do or say nothing until she had had her way. It would in the end hasten matters; it was her way; her mother had promised to leave the decision to her and to me, and that was her way of settling it.

Seeing that argument was useless, her mother, who knew that the proposed plan would only lead to further indecision, and her probable return to New York, decided to leave her, which she assented to, but with a bad grace.

Before night she wrote to her father: "If you will ask uncle B. to go to a medical lawyer, and state my case and demand me in the name of the law, . . . I will sign a paper making you my guardian, for I certainly am not able to do for myself. Tell him that *Dr. C.'s control over my mind brought me back here.* He neither offers to help me mentally or physically, and I doubt the moral help. He is going against Mrs. C.'s merciful advice, and in the end he will be punished for it. He expects me to make a complete sacrifice of myself, without thought of health, and not for the right, but for his own gain. The Christian Union is used as a bait only; there is no Christianity in what he is doing for me. You better act soon; I may not be so clear-headed soon."

To her uncle she writes: "If you go to a medical lawyer, and there are such, tell him *I was influenced by some one who had gained control over my mind to go back here.*"

Her last letter, written to her father, and showing the current of her thoughts, is as follows: "He is going to take my individuality from me, for his own gain, and not for any good reason. God never asks such a thing; it is because he understands the laws and thinks himself safe. There is no good about it. Catholicism means only sacrificing everything for his personal benefit. There is no right about it, and I will fight so long as I have breath in my body. Dr. B. would tell you there is no right about it now. He calls it morality for me to give my individuality for his gain. . . . I beg of you, take me away. None but a Unitarian would treat any one so. . . . Miss U. could get me out of here if you would go to her. He is afraid of *her influence* (I never heard of any such person). She is just as good as he, and stronger. I have made such a mistake, and I do not have a bit of liking for him, now that my eyes are opened. It is all chemistry and personal selfishness with him."

It would, perhaps, be placing this case too definitely to call it a "case of paranoia," for it has presented itself to me as a partially-developed case, at times reaching true paranoia, but often stopping short. For a long period, for instance, no delusions, as such, presented themselves, though the patient at times acted so strangely and irrationally that there could be little doubt that delusions must exist.

Every step leading up to paranoia was at different times passed through. Often there were only simple, insistent ideas present, apparently when she was working out the details of some subjective problem that troubled her.

Her mind was so curiously constituted that she could do little for any length of time without stopping to question the reasons for it. Then, if a thing had been done, the ground had to be gone over, and if her conduct could not be easily explained, an explanation had to be sought for.

This effort never succeeded very well, for it was exhausting, and finally confusing.

The period of insistent ideas was the most marked, naturally, when she was the most clear, hopeful, and willing to be diverted. At this time she went to the seashore to visit my family. She was then questioning herself and me how she should make herself believe as I did, and trying to aid herself in so doing by copying some one that she believed was better than herself.

But immediately on her return from the seashore she began to say, "I was really not myself there, though I tried very hard to be. I prevaricated only once directly, but I assented to things I did not quite understand at the time." She wrote: "The next day, when Mrs. B. (the nurse) asked me if I saw the lighthouses before the Dana house, I said 'No,' but afterward I knew what they meant. When Mrs. C. spoke of our having seen you all the same day I wanted to tell her of you showing me how to play tennis, and it seemed the only natural thing to say. I saw that it was right. I was *sure* then. And I think I understood all I was expected to understand the whole day."

The ideas that she was not practical, was a failure, was not like other people, were always present in the background of consciousness, and very frequently occupied the foreground, as has been abundantly shown in many places in the letters, as, for instance, when she said "she had the consciousness, one day at breakfast, of having lived superficially and not having her heart really lead. She tried to lift it that it might control, but the weight seemed too heavy for her. The consciousness of failure took all the courage from her, and all effort seemed useless and in the wrong direction. She knew that her first mistake must have been long before, but did not yet see where she was expected to succeed."

This set of ideas seemed to correspond somewhat to the first class of imperative conceptions of Westphal and Tamburini as given by Knapp.[1] The classification of the latter is: "Simple fixed ideas, insistent ideas proper, in which the anomaly of ideation is limited purely to the field of intellectual operations, a field purely theoretical without being manifested externally or passing into action (metaphysical insanity, insanity of calculation, first stage of the insanity of doubt)."

This case is not at all like the typical cases of insanity of doubt, yet in some points there is a strong resemblance. The element of doubt is marked all through the history, yet it does not manifest itself by the usual set of concrete acts, such as counting, washing, delirium of touch, etc. It is largely intellectual, much of the time passive, rather than outwardly active. It is a natural result of the fixed ideas which the patient is the subject of. Still it constantly is exerting its influence, and has become such a fixed habit of mind that in the end it may lead to imperative acts.

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[1] "The Insanity of Doubt." Phillip Coombs Knapp, M.D. Am. Jou. Psychology, Jan. 1890.

The negative effect of the doubts is bad, because each time the patient makes any progress toward improvement the weight of a feather is sufficient to turn the scale, and this weight generally comes from the questioning. Once give a reply which is not the one looked for and the old doubts come back with renewed force.

Lagrand du Saulle also (I quote from Knapp again) describes to some extent my patient's condition in his first stage of the insanity of doubt. In the first stage the patient is susceptible, exacting, dreamy, egotistical, and timorous, yet in full possession of his reasoning powers. He is filled with morbid thoughts; he begins to inquire into the reason for every trifling thought or act, or object about him. With this comes a lack of confidence, a distrust of his own powers, a need of verifying everything he does, of re-reading everything he writes, and an exaggerated scrupulousness in the most petty actions. In this stage the reasons for his scruples and his actions are often concealed.

I have not been able to discover that my patient verifies everything she does, but she has at times taken half a day to write a short letter to me, covering her bed with unsatisfactory copies of the letter. If we omit such an element in the case as this, Lagrand du Saulle's description covers many of my patient's symptoms.

Knapp says the imperative representation stands between the normal ideational process on the one hand, and the delusional on the other, as its malady *folie du doute* stands between the healthy reasoning process and paranoia.

If such is the case—and I think it is—my patient was largely the subject of imperative representations, and was in a mental condition similar to that in *folie du doute*. There were long periods when there were no indications of pure delusion.

Yet, no doubt, delusion must have existed, associated with the other mental phenomena, not often active, yet liable under favorable or appropriate conditions to be roused into action and lead to serious and important results.

Such was, for instance, the delusion that certain persons, and especially myself, exerted an influence over her, the effects of which might be felt at any distance without conscious action on my part. This influence might not be for her good, but it explained why she was led to do certain things which were apparently contrary to her wishes.

When she refused to play croquet because I influenced her not to; when she came a second time to Brookline, though she had said she might come and had written me letters saying she wanted to come, she distinctly stated that it was my influence which brought her back. That influence was something she recognized as a power to guide her, and it was strong enough to bring her to Boston.

She especially showed how strongly delusional her belief in regard to my influence was, when she wrote to her uncle: " If you go to a medical lawyer, and there are such, tell him *I was influenced by one who had gained control over my mind*." She evidently believed I had been able to influence her against her will, and what was still more striking as evidence of delusion, thought such a state of affairs would appeal to the judgment of a lawyer as the strongest ground of removing her from my care.

She again brings in the idea of influence in one of her last letters, when she says: " Miss U. could get me out of here. He is afraid of her influence. She is just as good as he, and stronger."

Delusions of persecution, so characteristic of paranoia, also exist to some extent, though so much concealed it has not been easy to understand them. In her last conversation and letters she evidently feels herself the victim of persecution. I expect her to make a complete sacrifice of herself for my gain: "The Christian Union is used as a bait only. There is no Christianity in what he is doing for me. He is going to take my individuality from me for his own gain, and not for any good reason. There is no good about it. Catholicism means only sacrificing everything for his personal benefit.' It is all chemistry and personal selfishness with him," etc.

If we admit that this patient is the subject of systematized delusions, as well as insistent and fixed ideas, or imperative conceptions, then we have gone beyond the limits of Lagrand du Saulle and Westphal and Tamburini, by which the case might be classed as an incipient form of the insanity of doubt. We do not find a sufficient group of data to class it as a fully developed form. There is not the exaggeration and intensity of the doubts resulting in numberless absurd, incongruous and insane acts.

If we are to follow recognized *Hand-zeigen*, and say only such and such symptoms constitute true *folie du doute*, we must search for another name, or another place in a classification, for this case.

The character of the delusional beliefs partakes less of the nature of doubt than fixed ideas. There is no question in her mind; she has been subject to my influence, and is so positive about it that even a lawyer can understand it, she thinks. Then she goes further, and sees that she is being persecuted for ulterior motives, and sees a religious element in this persecution.

Such elements as these seem to cut the case away from insanity of doubt pure and simple, and float it down into the more or less boundless sea of paranoia. While, perhaps it is hardly there as yet, it tends in that direction, and can hardly escape arriving there in time.

The medico-legal aspects of such a case as this are of interest, though their consideration is entirely outside the intention and scope of this paper, which is merely the report of a case.

Many times this patient might have been seen when she would be so quiet, non-committal, and apparently rational tone in her conversation, that she would have made the impression of at least passable sanity.

The importance of reading and preserving the correspondence of alleged insane persons is also demonstrated in this case. Without it I should have been hardly able to furnish any detailed data of the working of the patient's mind.

THE USE OF COMPRESSED AIR IN CONJUNCTION WITH MEDICINAL SOLUTIONS IN THE TREATMENT OF NERVOUS AND MENTAL AFFECTIONS.

In the Medical Record, Aug. 29, 1891.—D. J. Leonard Corning describes a procedure consisting of the following elements: 1. Sequestration of the peripheral circulation in the extremities, either by ligatures compressing arteries and veins, or the arteries alone, or the veins alone. 2. The introduction of a chemical having an affinity for nervous matter, and especially that composing the cerebro-spinal axis. 3. The immersion of the subject in air condensed much above the pressure of the normal atmosphere.

By applying the ligatures an extensive sequestration of the peripheral circulation is caused, thus reducing the amount of blood to be impregnated with the medicinal substance. The dose of medicinal substance being distributed only throughout the blood-mass contained in the trunk arrives in a much more concentrated condition in contact with the cerebro-spinal axis than would occur had the subdivision extended to the blood in the limbs. The quantity of blood in the trunk is but slightly reduced in volume, and is only shut off from that in the limbs. Consequently, when the condensed air presses upon the blood circulating at the surface of the trunk, it is forced in the direction of least resistance, *i.e.*, the cerebro-spinal cavity. Hence the vasomotor tension will be greatest at this point, and as a result the transudation of the medicated blood into the tissues of the brain and cord will be greatly enhanced. Moreover, the perpetuation of the beneficial effects is due in no small degree to the nutritive changes traceable to this increase in vascular tension. From facts and considerations brought forward in his paper, the author considers this system capable of extensive application, especially in the treatment of nervous and mental affections of a rebellious and unyielding type.

A. F.

TUMORS OF THE THIRD VENTRICLE WITH REPORT OF A CASE OF SARCOMA OF THE THIRD VENTRICLE, AND OPTICO-STRIATE REGION.[1]

By CHARLES L. DANA, M.D.

TUMORS of the brain, originating in the walls, and filling the cavity of the third ventricle, are very rare. They are generally described under the class of tumors of the optico-striate region, or tumors of the basal ganglia. In almost all cases before death, the new growth nvades the lateral ventricle, and destroys more or less of the thalamus, corpus striatum and neighboring parts.

Barié (Gaz. Méd. de Paris, No. 30, 1875) has reported a case in a woman of fifty-seven. Gowers (Lancet, March, 871) reports a case in which the tumor developed posterior-y, involving the corpora quadrigemina.

F. Woodbury reports a classical case, in which a gliosarcoma filled the third ventricle, and was moulded to its nterior. It blocked the aqueduct of Sylvius, however, and caused a ventricular dropsy.

The symptoms were mainly those of vertigo and ataxia Amer. Journal of Medical Sciences, n. s. vol. 76, July, 878).

Russell has reported a case of tumor of third ventricle in an epileptic boy. The tumor really, however, developed from the base, involving the optic chiasm and tract. (Med. Times and Gazette, vol. i, 1873, p. 522).

Pitz (Jahrbuch f. Kinderkr., vol. 111, 1870) and Duffin Lancet, June 17, 1876) have reported cases of tumors ex-ending into the third ventricle, but involving or starting from the quadrigemina.

In the case recorded here, the tumor evidently started from the median surface of the thalamus, where it forms the lateral wall of the third ventricle. Instead of infiltrating the basal ganglia, it filled up the ventricular cavity, pushed up the velum, pressing upon and thinning the corpus callosum, and involving opposite thalamus and ventricular wall. It finally infiltrated the ganglia and capsule, causing hemiplegia.

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[1] Contributions from the Neuro-pathological Laboratory, of the New York Post-Graduate School.

SYNOPSIS.—Male, no syphilis ; sexual excesses and perversions ; some mental disturbance two years before death ; four months before death became stupid ; later, developed slight hemiplegia, insomnia, intense headache, vomiting, ataxia, increasing stupor, no anæsthesia or oculo-motor symptons ; vision defective ; no convulsions. Death. Autopsy, sarcoma starting from right thalamus, and filling the third venereal.

History.—Thomas D., forty-one, male, Ireland, awning-maker.

Previous history.—No ventrical disease so far as known, except gonorrhœa ; moderate drinker, hard smoker. No history of accident or blow on head ; great sexual *excesses*, and perverted sexual habits. About three years ago he had an attack which his wife called a severe cold, attended with intense pains in the head. He got over this, and was apparently well.

About two years ago, his wife noticed he was "flighty." Not feeling well, he went South, and stayed there from December 18th, 1888, to August, 1889. This visit is asserted to have been caused by some dishonest practices of his. When he returned, he was still flighty, had got stout, could no longer attend to business. He had slight left hemiplegia, insomnia, intense headache, vomiting.

Later he became stupid, sat quiet all day, and slept a great deal. His gait was unsteady, like a drunken man's ; eyesight poor ; hearing good ; attacks of vomiting, vertigo ; no forced movements. (These facts were given by his wife.)

Condition on examination.—When brought to the hospital, January, 1890, he was still in a stupid, semi-comatose condition, but could be roused enough to give brief, but, apparently, intelligent answers. He slept heavily most of the time. Articulation was distinct. There was incomplete left hemiplegia, the arm and leg being most involved. The tongue did not deviate.

Digestion was normal ; pupils normal size, equal, and responded to light ; no paralysis of eye muscles ; sensation was not affected. He was very constipated. Temperature normal ; urine normal. No disease of the thoracic or abdominal viscera.

His sleepiness and stupor gradually deepened, and he died after almost a week.

Autopsy twenty-four hours after death. Only the brain was examined.

On removal of skull-cap, the dura mater and sinuses were found normal ; the brain itself presented no abnormality externally ; blood vessels not notably diseased.

The brain was opened by making a longitudinal section through the callosum and base ; then the pons and cerebellium were removed by sections through the crura.

On cutting through the corpus callosum from above, it was found very much thinner posteriorly. Lying just beneath it entangling the choroid plexus, and involving the fornix, was a large irregular gelatinous grayish mass of about the consistence of thin brain tissue. It was about one and one-half to two inches in diameter. It appeared to grow out of the mesial surface of the right thalamus especially, but to have infiltrated the left thalamus also. On the right side it extended the whole length of the third ventricle, and had pushed into the right lateral ventricle, involving somewhat the basalganglia. It had pushed up the roof of the third ventricle, and thinned very much the corpus callosum posteriorly. There was no great excess of fluid in the ventricles.

On making sections transversely through right cerebrum, there was seen an infiltrating neoplasm, involving the right upper surface of the crus cerebri and right tubercular quadrigemina. The limits of the right thalamus cannot be made out, and the candate nucleus and part of the internal capsule are involved. The lenticular nucleus is not affected. The tumor almost fills up the third ventricle.

On the left side, the tumor has pressed somewhat on the thalamus and infiltrated it, but has not affected the corpus striatum appreciably.

The specimen was hardened in Müller's fluid and alcohol, and examined microscopically. It was found to be a sarcoma, developing, apparently, from the median surface of the right thalamus. It infiltrated this somewhat, but the growth was chiefly into the cavity of the third ventricle.

Examination of sections of crus cerebri showed no descending degeneration, despite the hemiplegia ; hence the disease could not have directly involved the capsule much.

The symptoms, it will be noted, resemble somewhat those of lesions of the corpus callosum, viz., hebetude, stupor, headache, optic alrophy, insommia, later, hemipiegia.

Neurological Digest.

CURRENT ANATOMY, PHYSIOLOGY AND PATHOLOGICAL ANATOMY OF THE NERVOUS SYSTEM.

BY JOSEPH COLLINS, M.D.

PATHOLOGICAL CHANGES FOUND IN A CASE OF ANTERIOR PLOIOMYELITIS.

St. John Budden, Journal Mental Diseases, Jan. 18, 1892. The patient was sixty-one years of age, intemperate and syphilitic. No family history of neurotic taint, except his mother was said to be paralytic some years before her death. In consequence of an injury to the spine nine years previous he had paraplegia, from which he never completely recovered. A severe injury to his left hand two years and nine months afterward was followed by atrophy of the hand and arm, and five years later this was followed by atrophy of the opposite side. There was at this time a failure of sight and a change in the voice. Physical examination showed absence of reflexes both superficial and deep in all the extremities, and muscular percussion gave scarcely perceptible moves. The limbs were greatly wasted, the upper more than the lower, many of the muscles seemed to have entirely disappeared, marked wrist-drop, classic appearance of the hand, absence of thenar and hypothenar eminences. The lower limbs were more wasted below the knees. Muscular power was almost completely absent and when he did move the limbs slightly, the movements were irregular and incoördinate, skin was shiny and covered with branny desquamation. Considerable anæsthesia of the limbs and trunk, and sensation was delayed from all parts. Analgesia in all parts of the body except the face. Patient had no control over the bladder or rectum, sense of smell absent, taste and hearing fairly acute, slight internal strabismus of right eye and diplopia. Some five years before his death he suffered from distressing fulgurant pains in the limbs and muscular startings, and toward the latter part of his illness these became less intense, but they never completely disappeared. Although the patient was in bed for five years bed sores were never troublesome and healed up quickly when they did occur. The electrical reactions were those of degeneration.

Sections cut on the freezing microtome and stainedwith *blue*-black; the ganglionic cells in the motor areas of the cortex were swollen and globose; not distinctly outlined and evidences of granular degeneration. The changes in the pyramidal cell layer were of the same character, but less well marked, the principal features being the pallor and indefiniteness of both cells and nuclei. The first layer showed the slightest evidences of degeneration, and the spindle was very slightly changed. The gray matter of the remaining convolutions showed simply evidences incident to senility.

The spinal cord was much shrunken, especially in the lumbar segment; microscopically examined it showed that the entirety of the posterior columns was diseased, most marked at the periphery. All the nerve fibres were atrophied, but there was no perceptible increase of connective tissue here, and the degenerations seemed to be continued but a short distance into the lateral columns. The remaining white columns showed a crowding together and an indistinctness of detail. In the anterior cornua no healthy nerve cells could be found; they were tinted, shrivelled and much pigmented.

The dorsal segment showed similar changes in the posterior columns, except that a great number of vessel orifices was found here. The anterior columns in this region gave a distinct increase in connective tissue as also did the lateral columns just outside the anterior horns. The nerve fibres in the peripheral parts of the anterior zone were all very much wasted. In the crossed pyramidal tracts the changes were the same. Clarke's columns were scarcely discernible, and no cells could be found in the anterior cornua.

The disease was much less marked in the white matter of the cervical region, and decreased as the medulla was approached, the column of Goll being most affected at the periphery and the changes in the posterior root nerves remaining the same. The cell disintegration in the anterior horns was as in the other regions. The degeneration in the posterior columns continued into the medulla, but the nuclei of the funiculus gracilis and funiculus cuneatus seemed to be intact here. The only nucleus in the medulla which seemed to be diseased was that of the 12th nerve.

The changes in the peripheral nerve were those of parenchymatous atrophy, many of the nerve bundles having entirely disappeared, the larger ones showing a loss of contour and great shrinkage. These changes were most marked in the sciatic nerves. Portions of the muscles taken from the flexors and extensors all showed atrophy of the fibres with granular disintegration and infiltration of the areolar tissue with fat, the greater part of the muscle being composed of densely nucleated connective tissue. In the cauda equina the degeneration in the nerve fibres was very extensive, and the pia mater about the cord was thickened and very dense.

The author thinks the patient first suffered from an acute poliomyelitis which was only partially recovered from, and that the crushing of the hand acted as an exciting cause in the development of the disease in the upper extremities, and this, with the multiple neuritis, which was subsequently developed would account for the symptoms. It is also the opinion of the author that the peripheral neuritis was secondary to the cornual changes, as the atrophy of the limbs proceeded indiscriminately and independently of the sensory disturbances. As regards what part the changes in the posterior columns played in the development of the symptoms, he considers it impossible to say, on account of the date of the beginning of the anæsthesia, or whether it was preceded by hyperæsthesia not having been established. The writer does not try to account for the changes in the cortex, or the influence they had in the course or development of the symptoms, but it is to be noted that they were confined to the motor areas.

A CASE OF PROGRESSIVE MUSCULAR ATROPHY, WITH DISEASE OF THE NUCLEI OF THE BULB AND THE CORTEX.

Dr. A. Alzheimer (Archiv. f. Psych., vol. xxiii, part ii, p. 459). The case reported is that of a merchant, 33 years of age, single and descended from a family without neuropathic history. In 1876 the patient suffered from an attack of typhoid fever; in 1877-78 an abscess in the femur troubled him, which resulted in a fistula, continuing till the time of his death. In 1879 there was first noticed a wasting of the thenar eminence. He became infected with syphilis in 1881, and was treated with mercury and no secondary symptoms were manifest. Toward Christmas of 1889 he suffered severely from pain in the stomach and vomiting, and in February, 1890, the acute psychical disturbance presented itself with delirium. When he entered the asylum the muscles of both arms and shoulders showed marked atrophy and fibrillary contractions. No disturbance of sensation or spasm, but an increase of the tendon reflexes. Severe delirium, followed by death, apparently from paralysis of the brain. At the post-mortem was found thickening and cloudiness of the pia mater, atheromatous state of the blood vessels, proliferation of ependyma in the ventricles, dark gray discoloration of the bottom of the fourth ventricle, atrophy of the anterior cornua of the spinal cord, the anterior roots and trunks of the brachial plexus, atrophy of the muscles of the upper extremity, the shoulder girdle and diaphragm, without a transformation of fat, carcinoma of the liver, tumor of the spleen and induration of the lymphatic glands.

The microscopical examination demonstrated simple atrophy of the ganglionic cells in the anterior horns; moderate sclerosis of the anterior ground bundle; in the atrophied muscles many hypertrophied fibres were found; extreme degenerative change in the vessels at the bottom of the fourth ventricle; degeneration in the nuclei of the funiculus gracilis and funiculus cuneatus and of the vagus and auditory nerves, and also in the ganglionic cells of the motorial area, the pulvinar and the corpus striatum; extensive changes in the ganglionic cells of the cortex cerebri. Weight of the brain and membrane, 1330 grm.; cerebrum, 970 grm.; cerebellum, 165 grm.; mid-brain, 165 grm. These last without the membranes. The spinal cord was cut in pieces 1 1-2 ctm. long and some hardened in alcohol, and afterwards stained by Nissl's method for examinations of the cells; others hardened in bichromate solution and stained by Weigert's method for medullated fibres.

In considering the clinical side of the case the author thinks it was impossible to have made a diagnosis of progressive spinal muscular atrophy during the life of the patient; but were it not for increased tendon reflexes it would be more clearly amyotrophic lateral sclerosis. To explain this abnormal myotatic irritability no changes were found in the spinal cord that could be held accountable for it, and the author thinks it is possible that the disease of the ganglia cells in the motorial areas is where the explanation of the problem should be sought for. The author sums up his results in the case as follows:

1. A case of spinal progressive muscular atrophy which agrees clinically and anatomically with the disease as ordinarily described, and which possibly may have been

influenced in its development by the overtraining of the patient in being a *devotee* to rowing and other sports.

2. Degeneration of the nuclei situated beneath the floor of the fourth ventricle. The localization of these pathological changes shuts out the connection of systemic degeneration of the cord, and possibly they were due to the syphilitic infection, and following the degeneration in the basal blood vessels.

3. An extensive disease of the ganglion cells of the cortex cerebri, without any changes worth remarking in the vessels of the cortex, which one must consider as the foundation for the serious psychical disturbance that was manifested. The anatomical examinations gave no apparent interdependence between the before-mentioned pathological changes. The observed changes in the cortex do not agree with those given in other cases of cerebral paralysis. The author does not attempt to give the *raison d'être* of the changes in the internal organs, as the liver and spleen ; but the histological changes were minutely and critically worked over. The changes in the ganglion cells, the nerve trunks and muscle fibres are elucidated by carefully prepared plates.

CONCERNING THE PATHOLOGICAL ANATOMY OF CHOREA.

Dr. Kroemer (Archiv. f. Psych. u. Nervenkrank., vol. xxiii, pp. 538-557). After first giving a thorough historical retrospect of the different opinions and theories which have been held concerning the anatomical changes necessary to the production of chorea, the author recites a case which came under his observation in the latter part of her illness and on whom an autopsy was made.

The patient was a thirty-five year old female who had presented no inherited or acquired neuropathic manifestations until her twenty-fourth year, when she remarked a disposition of the head to move involuntarily from one side to the other. Gradually the hands and feet became affected, so that she was almost unable to continue her work as a house-maid. After four years the movements becoming much worse, she was removed to a charity, where she remained six years, and during this period the contractions were so great as to throw her forcibly backward and forward; she was unable to walk alone and generally helpless. It was in her thirty-fourth year that mental aberration was first noticed. Formerly a quiet and ordinary young woman, she maniested great sexual inclinations, continuous masturbation, hought she was pestered by a man,etc.; she became childish, lly, tore her clothing, destroyed the furniture, went into he streets unclad, and other accompaniments of acute ania. She was unable to remain for a moment in the ame position, or to take regular steps in walking. The ands and feet were ever in movement, the former pro- ated, then supinated, the fingers quickly flexed and xtended; she was thrown in jactitation first to the right, hen to the left; slept poorly; spasms in the glutei muscles ept the patient from sitting; the head continued going orward and backward, then from side to side, the muscles f expression contracting continually so that her counte- ance was never quiet. No satisfactory results could be btained; sensibility and reflexes; but the former was hought to be considerably delayed. The patient mastur- ated continually and lawlessly, and continually importuned very man who approached her. About a year after enter- g the asylum she fell from a window, but no injuries fol- owed, except superficial skin wound. The patient con- nued to fail, the pulse becoming small and rapid, the mperature slightly elevated; respirations frequently of heyne-Stokes character, and chronic spasms continuing eanwhile, most of the muscles of the body now being mplicated. Later on symptoms of pulmonary inflammation; vas quickly followed by death.

The anatomical changes after death were found to be over the right hemisphere, a hæmatoma 5 ctm. in diameter, and over the entire left hemisphere one great hæmatoma. These sacs were so distended that the fluid spurted out in a stream when an incision was made into it, and the convolutions presented an outward concave appearance. The walls of the sac were roughened and appeared of old-standing, while the blood contained therein was fresh and evidently resulted in the last few days of life. In the cerebral ganglia and internal capsule were found a great number of little bodies, varying in size from so small as to be scarcely perceptible with the microscope, to one 6 mm. in diameter. These were greater on the left side. In connection with hese disturbances and defects there was an atrophy of the eft pyramidal tract of the medulla, and of the entire right alf of the cord. That is, there was here found about all he pathological changes that have been found in patients ying with chorea—such as the inflammation of the cerebral eninges, with evidences of both old and new imflammation, he changes in the corpus striatum and the optic thalamus, and a direct participation of the pyramidal tract in the medulla and the spinal cord.

The author thinks it was left to Kahler and Pick to first explain the relation of the many different anatomical changes found as accounting for chorea, and this explanation is that the pathological product lays within the range of the pyramidal tract, or at least in such relationship that it can make its presence felt. This disease process can, therefore, have its seat in any part of the course of the pyramidal road, from brain to cord, and the nutritional changes are not necessarily in various or all portions of this path, one single spot being sufficient. The process may be of various kinds, from a single hyperæmia to the most irreparable change, and in this way is to be explained the complex etiology of the disease. For instance, such a condition may result from embolism, the result of a rheumatic endocarditis with dendritic vegetations. In this way it may result from ordinary apoplexy, or from the hyaline bodies of Jakomenko, and lately described by Wallenberg, or even indeed the as yet unknown germ of Straton and Laufenauer, not to speak of the various nutritional changes that have been described by others.

ON THE CEREBRAL CENTRE FOR MOVEMENT OF THE VAGINA IN ANIMALS.

Bechterew and M. Slawski (Russian Medicinskoje Obesrenje, No. 15, 1891. Ref. in Neurog. Centralb., No. 1, 1892). Former investigation concerning the motor innervation of the vagina, as from Kehrer, Langley and Justrebow has left the question of a higher nerve centre in an unsettled condition, and with the idea of supplying this knowledge the authors have made some experiments on rabbits and sluts. A distended bladder was put in the vagina, and this communicated with a water manometer by means of a glass tube which came in contact with a rotating cylinder by means of Marry's writing apparatus; and in this way movements of the vagina in response to stimulation of areas of the brain were very distinctly apparent. The important points in their experiments are as follows: The cortex of the cerebrum contains centres of two kinds for the innervation of the vagina—one for the excitation of movement, the other for checking it. In rabbits they both lie in the anterior part of the motor area; in bitches they are in the sigmoid gyrus. These centres are not clearly separated topographically, and are very closely situated. In a single case did irritation of a single point in the cortex produce alternate contraction and cessation. It was further remarked that irritation in the anterior part of the optic thalamus produced checking in the movements of the vagina in rabbits as well as in the dogs. Irritation of the medulla oblongata was followed by contraction in the vagina. The tract conducting impulses to the vagina passes from the cortex through the spinal cord and later through the sacral nerves. The contraction of the vagina seemed to be inhibited by stimulation of the peripheral cut ends of the splanchnic nerves, and on the contrary stimulation of the vagi was followed by inhibition of movement. It is quite self-evident that the walls of the vagina have themselves secondary ganglia, which have an important influence over its movements. These ganglia were not, however, investigated by the authors. They note, however, the interesting fact that ligature in the superior portion of the vagina, that is, at about the internal os, irritation of the vagina was not followed by movement,and irritation of the above-mentioned areas in the cortex or the peripheral nerves was followed by no manifestations whatever.

CONCERNING MULTIPLE NEURITIS.

By Dr. J. Pal (Wiener klinischer Wochenschrift, 1891). The author remarks that our knowledge of multiple neuritis has been obtained for the most part during the past ten years and pathological cases, which were then unexplainable, now appear apparent.

The history of each of the cases are related, and concerning their etiology they are those agents which we ordinarily attribute to be the causation of the disease. For instance, two cases were due to alcohol, two more due to specific diseases, erysipelas and typhoid fever; one from exposure and one from arsenical poisoning. In the remaining one the etiology was obscure.

After the death the nerves examined, such as the optic, motor oculi, abducens, facial, auditory, radial, peroneal, and in some cases the phrenic and pneumogastrics, etc., showed quickness of degeneration, with the exception of the auditory. In the spinal cord the posterior root nerves were found diseased as were the postero-lateral columns from the dorsal region to the medulla. The posterior median columns showed very small degeneration tracts over a corresponding area. The ganglia on the posterior roots were normal apparently, and it is to be remarked that neither the fibres of the posterior roots going to the Spitzka-Lissatuer columns, nor the columns themselves were affected. In the cervical region the direct cerebellar tract was degenerated and going downward, the crossed pyramidal tracts showed similar changes, particularly in the cervical and upper dorsal. The direct pyramidal tract showed only slight changes, and this but in a very small area. After reaching the dorsal segment of the cord, the changes in the anterior white matter seemed to be limited to the crossed pyramidal tracts. In the opinion of the author these changes were analogous to those which might occur from a focus of diffuse neuritis at the dorso-cervical junction of the cord, but no evidences of such a process could be found. At the end of his article the author expresses his clinico-anatomical results as follows :

1. Multiple neuritis occurs often as a primary affection of the peripheral nervous system, and the changes in the nerves may be independent of any change in the cells of the anterior coronal.

2. In the course of multiple neuritis the central nervous system may become involved, the changes resulting from the same causes that caused the primary disease.

3. Although the funiculus gracilis and funiculus cuneatus may be and frequently are degenerated, this degeneration need not be strictly systemic.

4. The so-called neuritis of tuberculosis shows peculiar clinical symptoms, such as œdema of the feet and diminution of cutaneous irritability to the faradic currents, and these symptoms are sometimes the only indications of the multiple neuritis.

Electro-Therapeutical Notes.

By MARGARET A. CLEAVES, M.D.

Heliobas. "Electricity, though the most powerful of masters, is the most docile of slaves. It is capable of the smallest as well as of the greatest uses. It can give with equal certainty life or death ; in fact it is the key-note of creation. It is not only my theory, it is a truth, indisputable and unalterable, to those who have studied the mysteries of electric science."

"And do you base all your medical treatment on this principle?"

Heliobas. "Certainly. Your young friend here, who came to me from Cannes, looking as if she had but a few months to live, can bear witness to the efficacy of my treatment."—*Marie Correlli*, *Romance of Two Worlds.*

Nor does the above statement seem to be unduly emphatic, in view of the results obtained from the intelligent use of this form of energy in the treatment of disease. Its value is being daily demonstrated, even to the conviction of those who have frankly disbelieved.

It is not surprising, therefore, that among alienists, there are at last appearing exponents of its great value in the treatment of different forms of mental disease.

But while such is the case, we do not know of any systematic use of the different forms of the electrical current in asylums for the insane.

THE PHYSIOLOGICAL EFFECTS OF THE FRANKLINIC CURRENT.

Damian, of Paris, has recently published a study upon the above subject.

By means of his experiments he has conclusively demonstrated, that under positive electrization the heart's action is stimulated, and contracts with greater energy, as indicated by sphygmographic tracings. The temperature, with the same insulation, and with sparks, was increased from .025 to .4 of a degree; while with the simple bath, positive insulation there was an increase in the temperature of .5 of a degree.

The production of urea under the influence of the electro-positive bath was sensibly increased, its weight being elevated from 24.64 to 26.4 grammes. The same insulation with sparks increased the daily total of urea from 27 to 28, 30, 31 and 32.68 grammes. The electro-negative bath was followed by an increase in the volume of urine. In no other form of application was the volume sensibly increased or diminished, while under the same insulation with sparks the amount of urea was progressively diminished; but less with bath. The phosphoric acid in the urine was decreased under the negative electrization, but more so with the positive insulation.

The alkaline phosphates were diminished in the same proportion, but more so with positive than with negative; less with bath than with spark. The earthy phosphates were decreased under negative, less under positive electrization.

Thus we see by M. Damian's experiments that the heart's action is stimulated, the circulation improved, the temperature augmented, and the excretions increased. Further than this he has not yet demonstrated; but he believes that there are other effects which are as yet undemonstrable. A moral or psychic effect is universally conceded; but the above experiments have clearly proven that the influence of static electricity does not end there, as many are disposed to claim.

FRANKLINIZATION IN MENTAL DISEASES.

From the time of Professor Jallabert, of Geneva, in 1747–48, Maudyt in 1784, Perfect in 1740–89, but little use was made of the franklinic current until the grand reform of Pinel and Esquirol. Esquirol, in connection with Aldini, the nephew of Galvani, reported cases of cure by static electricity, and a series of experiments made upon a number of insane women at Salpêtrière in 1823-24.

Since then, and until late years, this method of treatment has been abandoned, largely, no doubt, because of the inefficiency of the machines provided for the development of this form of electricity.

In 1877, however, Charcot organized the methodical treatment of the patients in Salpêtrière by static electricity. And to-day the method comprises a number of partisans, and is taught in Russia, Germany and America.

On the 7th of August, 1891, Dr. Paul Ladame, of Geneva, read a paper on the use of static electricity in the treatment of mental diseases before the Congress of French Alienists at Lyons, France.

This paper appears in full in the "Bulletin de la Société de Medicine Mentale de Belgique" for September, 1891.

From it we glean the following thoughts and cases:

Dr. Ladame began using static electricity in the treatment of his patients at Geneva, after having studied its use and effects at Salpêtrière. His object, he says, in presenting the subject is to encourage the adoption in asylums of a therapeutic agent which is not only of great value, but very simple.

Conditions of psychic depression, hypochondria, and melancholia, with insomnia, seemed from the first to clearly indicate the necessity for treatment with static electricity.

Under this head he reports the following case, a lady, æt. forty-two, became the subject of melancholia under great grief:

She either slept not at all or with horrible dreams. There were no hallucinations of the senses; she was not hysterical, nor were there evidences of nervous trouble previous to her sorrow. She took but little food, often refusing all nourishment, and was rapidly becoming emaciated. She complained of præcordial misery, and suffered constantly from violent headaches. Her hair fell out badly. She refused to be taken care of, but did submit to static electricity, showing, however, much discouragement. Daily séances, lasting five minutes each, were given in the form of electro-static baths and light breeze in the form of a douche on the head and præcordial region.

After twelve séances a considerable degree of improvement was manifested. Sleep was restored, the hair ceased to fall out, the appetite slightly increased, and she came for her electricity without resistance.

The treatment was continued six weeks, when the cure was accomplished.

Menstruation, which was suspended during the melancholia, returned and became regular during, or as a result of, the treatment. This is a result which was noticed by several writers in the last century, and is one which Dr. Ladame says he had often noticed.

In the case of a man, of seventy-five years, the subject of *melancholie anxieuse*, treatment by static electricity was followed by a very great amelioration in the patient's condition. In such a case sparks should not be used, nor any treatment which acts suddenly or abruptly and disturbs the patient. The applications should be gradual, and due attention paid to the fear and apprehension shown by the patient. Care and discrimination should always be exercised.

The electrical treatment is generally believed to be a stimulant to the nervous system, but in *melancholie anxieuse* it may be noticed that the electro-static bath and breeze are soothing to the patient. When a sedative influence is desired, avoid shocks. In such cases the bath is better than the sparks, and should be given moderately at first and in short séances. Study your patient and learn to know his psychical impressions.

In psychiatry, the minutest detail in the application of a therapeutic method may be of extreme importance in its effects.

In melancholia, with apathy, a more stimulating treatment is necessary. The cases reported by Dr. Ladame are light ones, he having had no others under care, but in these cases he is of the opinion that the spark would be efficacious.

Dr. Mossdorf, of Dresden, he says, reports great improvement in a case of melancholia, with stupor, under the influence of static electricity, combined with galvanization.

Dr. Ladame has successfully treated cases of depression, with ideas of suicide, strange sensations in the head, neuralgias, paræsthesias, hyperæsthesias, not clearly located by franklinization, beginning with the simple electro-static bath, and using successively the breeze, light sparks, friction, and finally energetic sparks, with metallic balls of divers diameters.

Franklinization he regards as a tonic particularly efficacious in asthenic psychoses, and especially those developed after acute illness and in neurasthenic conditions from overwork of all kinds.

But there are other circumstances under which he finds it useful, he says, and reports a case of *folie circulaire*, over forty years of age, who every year, for twenty years, had had four months of excitement and eight months of depression.

After having treatment with static electricity, she was better, and asked of her own accord for a calming séance when excited and sparks to the spine when depressed. The relief was always sure. All kinds of treatment had been tried before. She was not cured, but improved, and had taken courage because of her improvement, bearing the changes from one condition to the other with fortitude.

Dr. Ladame did not conclude from this that *folie circulaire* was curable, but thought it worth while to mention this persistent improvement. Chronic systematized delirium, with hallucinations of the senses, did not seem to be influenced by electricity.

The following case is reported as illustrative:

Coachman, æt. thirty-four; had suffered for twelve years with the delirium of persecutions, with hallucinations of the senses, especially of hearing; sometimes hallucinations of sight, taste and smell were present; also sensations referred to the genital organs, which he thinks were caused by his persecutors. He was in the habit of addressing petitions to all in authority, headed " A Demand for Justice."

In the first static séance, the bath was given. To this the patient had all manner of objections. " Would not electricity excite his persecutors ?" " No; it will paralyze them," answered the doctor, "and strengthen him."

All objections and contrary suggestions which patients will not fail to formulate should be disputed by the doctor, for auto-suggestion in psychiatry is the enemy.

The drawbacks to the electrical treatment in the above case were recognized. He again objected. "Would the electricity strengthen his friends?" He heard friendly voices encouraging and defending him. He was afraid his friends would get the better of his enemies, and really did not care to have any one meddle with his affairs, even for his welfare.

After a few treatments he admitted improvement, but thought the treatment should be kept up constantly to keep his persecutors away. They have not hurt him since treatment began, but he hears them talk. As the quantity was increased he exclaimed, "The whole gang are running away laughing—they are not afraid of electricity."

After two weeks of treatment there was great improvement—no more persecutions, and he began to see the situation more clearly.

He lost confidence, however, after a time, and refused to continue the treatment. For twelve days there was no séance, when he returned, feeling worse, and said that the nightly persecutions had begun again. He was then treated with sparks to the back and limbs, and breeze to the head. Treatment was continued for six weeks, with great improvement. The nights were calmer. The hallucinations of hearing did not stop, however. The improvement in this case seemed to be due largely to a temporary suspension of the habit of masturbation, which the patient ascribed to assaults from his persecutors.

A woman, æt. forty-eight, who had been a patient in an asylum for six months, when thirty-five years of age, developed melancholia, with suicidal ideas. Every spring, for two or three years, she had suffered from mental excitement, with religious preoccupation. There was inherited taint, several persons among her ancestors and collaterals having been insane. She did not sleep. Had plans for the evangelization of the world. God called her to a great destiny, and she must spread the gospel. Being an intelligent woman she hid her plans, and it was impossible to tell whether her hallucinations of hearing were true or feigned.

Static electricity was administered for six weeks, followed by considerable improvement. She slept and ate well. She then went to some baths and remained a whole year without bad symptoms. The trouble returned, however, in the following spring, and she had to be placed in an asylum.

"I could still," says Dr. Ladame, "give many other observations in which franklinization has brought relief, if not cure.

"*Je citerai spécialement encore les obsessions pathologiques, le délire de toucher et la folie du doute, ainsi que bien d'autres formes de la folie des dégénérés. Les obsessions ne sont pas modifiées par le traitement, il est vrai, mais le malade se fortifie contre elles et les supporte mieux.*"

When hysteria or neurasthenia are the causes of psychical trouble, electro-static treatment has great advantages, and it is in those cases that franklinization gives the best results. Constipation, so frequent with the insane, can be successfully treated by static electricity. This function of the bowels can be regulated, especially in the hypochondriac, by discharging every day, for a few moments, a great number of sparks on the abdominal parietes. Professor Pierret is quoted by Dr. Ladame as follows: "There is a trilogy in the debut of every case of insanity, headache, insomnia, and constipation." If the proper method of franklinization is found that best suits each particular case, static electricity will prove efficacious in each of these symptoms.

Dr. Ladame concludes that in franklinization we have an agent possessing real advantages over other therapeutic methods in many cases, but especially in the asthenic and depressed form of psychoses.

It is sometimes preferable to other forms of electrization and to hydrotherapeutic applications, and it always takes their place. In some cases it will doubtless be of more use if combined with other methods.

It is to be regetted that Dr. Ladame has not given in his report the insulation used, whether positive or negative. With positive insulation the application of static electricity is stimulating; with the negative, depressing.

The question arises whether the relief from constipation was due to the discharge of sparks upon the abdominal parietes or to the spinal treatment common in all of these cases, in which the lumbar and sacral plexus of nerves were stimulated by the static sparks.

The apparently contradictory statements that electricity acts as a stimulant to the nervous system and yet has a soothing effect, as in the case of *melancholie anxieuse*, are capable of satisfactory explanation.

Under the influence of the franklinic current, as has been demonstrated by Damian, the heart's action is stimulated, the circulation, therefore, improved, the temperature augmented, and the excretion of urea increased; in a word, the processes of oxidation are furthered. The activity of the skin is also increased, and the bowels stimulated to better and more frequent action.

It is absolutely impossible for these conditions to be set up in the asthenic and depressed forms of psychoses without adding materially to the well-being of such patients, and relieving, for the time at least, the sense of mental anxiety and depression from which they suffer. Successive reliefs following successive franklinizations must do much toward establishing the physical and mental health. Had the treatment in Dr. Ladame's cases been carried on in a well-organized hospital or asylum, it is quite probable that his results might have been even more satisfactory, as no class of patients are so difficult to treat in private practice as the insane. It is to be hoped that this report of Dr. Ladame's will stimulate further effort in this direction.

We recall hundreds of patients in the various stages of dementia, with impaired circulation, cold extremities, inactive skins, constipated bowels; in fact, with imperfect oxidations, whose physical condition at least would have been ameliorated by means of static electricity.

And the question naturally arises whether the processes of degeneration might not be arrested under the influence of improved nutrition and more perfect oxidation? And if no other result is obtained, the physical condition of the patient would be improved, and their existence made more tolerable. In the functional insanities, as the melancholias, much more is to be hoped for than simple amelioration.

That the galvanic and faradic currents are not used in hospitals for the insane we can readily understand, and much more readily excuse, because of the extreme difficulty of application in insane patients, as well as the amount of time it would require.

With static electricity the same objections do not obtain. It is easy of application, and to patients of the character suggested its administration would not be difficult. It is ertainly to be hoped that the value of this form of nergy will be considered by those in charge of hospitals and asylums for the insane, and that at no distant day it will be used intelligently in them.

So far as we know at this writing no public asylum or hospital for the insane in the United States is so equipped, but we are glad to note, in this connection, that the new State Hospital for the Insane in Minnesota is just about providing a static machine, as one of the therapeutic measures to be used.

We shall watch with interest for reports from time to time of their experience with it, and the results obtained.

THE FARADIC CURRENT IN THE TREATMENT OF INSANITY.

We find reported in the *Annales Medico-Psychologiques* for November and December, 1891, two cases of insanity treated by means of the faradic current by M. Magalhaes Lomas, of Portugal. The apparatus used was that of DuBois Reymond, with the bi-chromate cell of Grenet.

The first case was one of melancholia in a man of forty-two years of age. The condition was produced by a violent moral shock. He tried to commit suicide by cutting his throat. After the suicidal attempt there was profound apathy, with aversion to food and extreme emaciation. The involuntary discharge of urine and fæces was habitual. He also had during the course of the first few months a hæmatoma of the left ear, followed by recovery.

His medication was a general tonic one, but was without effect on his general mental state, and he remained entirely unimproved. His condition was that of dementia. At this stage treatment with the faradic current was instituted. The negative electrode was applied to the neck of the patient. The one hand of the operator was applied to the head of the patient, while the other held the positive electrode. This manner of administration was adopted in order to exactly and conveniently appreciate the intensity of the electricity.

The séances lasted for from ten to twelve minutes. The faradization was sometimes cephalic and sometimes general, the current feeble. After one dozen days the amelioration was considerable, and the cure of the patient was established one month afterwards.

The second case, a laborer, æt. twenty-six years, inherited neurotic tendencies.

After a violent access of mania he passed into a condition of almost complete stupor, the same as in the preceding patient, and in time was considered a dement. His physical state was most miserable, and there was involuntary discharge of urine and fæces habitually. The application of faradic electricity was followed by equally good results as in the first case.

The same treatment was being employed in a case of the mania of epilepsy, but at the time of the report rested without results.

Apropos of this line of thought is an interesting study on the use of electricity in mental disease by M. le Dr. Jules Morel, of Ghent, Belgium. His experiments were made, we believe, with the galvanic and faradic currents. Dr. Morel concludes that it is precisely in the melancholias, and in the melancholia with stupor, that electrotherapy seems to be of the most efficacy. In mania, on the contrary, it gives but little success. In partial delirium it acts, above all, on certain symptomatic elements, such as hallucinations of hearing.

There is, he says, naturally but little to expect from this method in dementia and general paralysis.

In short, electricity can render important service in the treatment of "*des folies nervosiques*," but in these affections, as in other forms of mental disease, the morbid indications are not yet well established, and an empirical plan is necessary.

THE PUERPERIUM AS A FACTOR IN THE ÆTIOLOGY OF MULTIPLE NEURITIS AND DEGENERATIONS OF NERVE TISSUE.

H. Handford, M.D., in the British Medical Journal, Nov. 28, 1891, reports two cases of multiple neuritis, both probably of alcoholic origin, where the onset seemed most clearly to be determined by childbirth. He mentions a third case where the exact diagnosis was more difficult, but its onset immediately following confinement was equally clear. After quoting Gowers' suggestion in this connection that "the tissue health is lowered, and hence slighter causes excite neuritis," he says the rapid progress of tabes dorsalis, and the frequency of optic atrophy in it when sexual relations are actively maintained, has been frequently noted. The relation of child-bearing is probably of a similar nature, and it is not suggested as a sufficient cause *per se*. On the other hand, childbearing is a common occurrence, and the neuritis may have been a coincidence, but multiple neuritis is a comparatively rare disease, and for three out of six or seven cases, in both sexes, to commence with childbirth seems an undue proportion. The author then asks, "is the influence of childbirth one of the factors which render alcoholic neuritis so much more common in women than in men, while drinking habits are more prevalent in the latter?" A. F.

Periscope.

EXCERPTS WILL BE FURNISHED AS FOLLOWS:

From the Hollandish, Swedish, Danish, Norwegian, German, Portuguese, Roumanian, Spanish, and Italian:
F. H. PRITCHARD, M.D., Norwalk, O.
From the Swedish, Danish, Norwegian and Finnish:
FREDERICK PETERSON, M.D., New York.
From the German:
WILLIAM M. LESZYNSKY, M.D., New York.
BELLE MACDONALD, M.D., New York
From the French:
L. FISKE BRYSON, M.D., New York.
G. M. HAMMOND, M.D., New York.
From the French, German and Italian:
JOHN WINTERS BRANNAN, M.D., New York.
From the Italian and Spanish:
WILLIAM C. KRAUSS, M.D., Buffalo, N. Y.
From the Italian and French:
E. P. HURD, M.D., Newburyport, Mass.
From the German, Italian, French and Russian:
ALBERT PICK, M.D., Boston, Mass.
From the English and American:
A. FREEMAN, M.D., New York.
From the French and German:
W. F. ROBINSON, M.D., Albany.

The Editor will not accept as ORIGINAL ARTICLES and CLINICAL CASES those that have appeared elsewhere.

Authors are requested to make none but typographical corrections on the proof sent to them. The manuscript must represent the final form in which the article is to be printed.

PATHOLOGICAL.

MORVAN'S DISEASE.

Marchiafava and Bignami describe two cases which have come under their direction, both of which offer the complex symptomatology characteristic of Morvan's disease:

The neuralgic pains preceding the appearance of paresis and analgesia, the paresis accompanied with muscular atrophy of the extremities. Along with the analgesia was tactile and thermal anæsthesia, more or less diffuse and well marked. The characteristic trophic disturbances were present from the onset, with symptoms of whitlow, redness, swelling, tumefaction of the fingers and toes, with necrosis and expulsion of small bony fragments, giving the mutilated extremeties a curious appearance.

In the first case the trophic lesions extended to all the digits of the four extremities. Generally not more than three or four of the fingers are the seat of whitlows, and in very severe cases, as those of Prouff, Morvan and Jurgensen, from 7 to 9 digits were affected. In this case the disease began in the lower extremities, whereas, generally, these parts are exempt.

In the second case the disease followed a trauma, was accompanied with incontinentia urinæ, began in the toes and was limited to the lower extremities. The tibia was also the seat of the trophic disturbances, and the joints, especially the tibio-tarsal, had undergone marked destructive alterations.—(Bulletine d. R. Accad. Med., di Roma. fas. ii, iii, 1891.) W. C. K.

HISTOLOGICAL ALTERATIONS OF THE NERVOUS CENTRES PRODUCED BY ELECTRICAL SHOCK.

Magini, of Rome, experimented upon dogs, cats, pigeons, white mice and rabbits, employing the potential electrical apparatus of Winsurth. After examining the brain cord and peripheral nerve carefully he arrived at the following conclusions:

1. That death by electrical shock, where there is no external or appreciable internal lesion, is produced by a profound alteration taking place in the ganglion cell of the cerebro-spinal system.

2. That such ganglion cells show great changes in size, being shrivelled and atrophied, deprived of nucleus and nucleolus, and accept an intense stain.

3. That the electrical shock, oft repeated, favors diapedesis. W. C. K.

PYRAZOLE.

H. Tappeiner, Centralblatt für klinische Medicin, No. 46, has found that this substance possesses peculiar properties which may be used to advantage in certain forms of nervous disease. Given in large doses it is a paralyzer of the nervous centre. As a heart stimulant its action is prompt. That it is an excitant of the secretory apparatus of the kidney is shown by the active diuresis following its administration. Aside from these conditions produced by pyrazole, the physiological action is very similar to that of antipyrine. The dose is from one-half grams. No nausea, vomiting or other unpleasant sensations have been observed to follow its employment. B. M.

TREATMENT OF THE STATUS EPILEPTICUS.

Dr. Kerning's method of dealing with these cases, and in which he has been very successful, is to give subcutaneous injections of pilocarpine in conjunction with camphor in emulsion. Soon after its administration, the convulsions cease, the pulse becomes better, and the patient drops off into a sound sleep. In some instances he substituted camphor for a quarter of a grain of morphine, but the pilocarpine was never omitted. Of course, if œdema of the lungs and collapse had come on, it was too late to use the remedy, but it had been successful where the patients were in a state of coma. (St. Petersb. med. Wochenschrift.) B. M.

HYPNOTISM AS A CAUSE OF DEATH.

Von Surbled reported such a case in the "Journal des Sciences, Méd. de Lille", July, 1891, and more recently in the "Weiner medicinische Wochenschrift."

The patient, a man aged fifty-two years of age, was of good habit and unusual intelligence, without hereditary predispositions to disease of any kind. He was much interested in the subject of magnetism, and had a great desire to become a medium. On March 31, at a public meeting, he had allowed himself to be used as a subject, in the demonstration of hypnotism. On the following day he devoted himself to the discussion of the wonders of magnetism. On April 10th his family began to notice evidences of eccentricity in his conduct. On the 16th he insisted on going to Paris, but had to be brought back by force, as he had become violent. He continued in a wild state of excitement and delirium, believing himself to be in a hypnotic state, until death, after a period of coma, took place on April 22d. The author, after very careful study of the case, was convinced that the hypnotic séance of March 31st, over-stimulated an excessively impressible cerebrum, and was responsible for the subsequent development of encephalitis, from which the man died. B. M.

CLINICAL.

HYSTERICAL ATTACKS ASSUMING THE FORM OF JACKSONIAN EPILEPSY.

Dr. Ballet (Gazette des Hôpitaux) calls attention to the fact that while hysteria often resembles the attacks of ordinary epilepsy, it may sometimes approach very closely to the partial or Jacksonian form. He cites the case of a young girl, suffering from "grande hysterie," and presenting the characteristic symptom of left hemi-anæsthesia. She has had the classical "grande attaque" a number of times, but, of late, convulsive seizures of a different nature, have made their appearance.

These may be shown by simply rubbing one of the two hystero-genetic zones, to be found on the patient's body, when immediately the head turns toward the left side. Froth appears at the mouth, and the muscles on the left side of the face begin to twitch.

These symptoms, taken together, represent almost exactly a lesion of the motor centre of the face. A circumstance which often renders the diagnosis more difficult is the fact that these attacks are frequently limited to the epileptiform stage, and are unaccompanied by any other hysterical symptoms.

This patient had at one time sixty-two attadks in the space of an hour and a half, but at present the attacks are separated by well-marked intervals, and there are other symptoms, such as catalepsy, hallucinations, etc., which render the diagnosis of hysteria easy. The absence of paralysis of the members affected is also a sign of great value, and, as it is almost always present in true Jacksonian epilepsy, but very rare in the hysterica lform.

Still, another very important symptom, is that the urea is increased in the urine, which is voided after an epileptic attack, but is diminished in the hysterical condition.

W. F.

INEBRIETY.

T. L. Wright, M.D., writing on this subject, in the Virginia Medical Monthly, Oct. 1891, says: There are few more common physical derangements in the inebriate than those of the heart. Excessive alcoholic indulgence injures the walls and valves of this organ, and also deranges and dilates the calibre of the larger blood vessels. However, heart disease frequently precedes inebriety, and a congenitally defective heart may do much in driving its possessor to drink. Hereditary heart affections are common, but often exist unrecognized, as sudden deaths frequently prove. The patient at one time, if no complicating troubles exist, and the circulation is good, has an active and acute mind, and his feelings are agreeable. Again, the same heart acts badly, perhaps the liver or kidneys, or stomach, fail in function. The circulation becomes weak. The nerve centres suffer, and the mind is slow, stupid and melancholy. Now the alcoholic potion is taken and instantly a most welcome relief experienced. Heart disease is one of the most common forms of heredity; nor is it essential that in alcoholism, ancestry should owe heart disease to the alcoholic habit. It may be from a family strain of rheumatism; or causes apart from the inebriate diathesis. Parents who drink to alleviate the distress from deranged heart function will not unlikely be followed by sons who will do likewise. Here it is the cardiac affection, not the inebriety, that strictly is hereditary. A. F.

THE PRESENT STATUS IN BRAIN SURGERY, BASED ON THE PRACTICE OF PHILADELPHIA SURGEONS.

In the University Medical Magazine, Oct. 1891.—Dr. D. Hayes Agnew presents a paper containing fifty-seven cases of trephining for traumatic epilepsy. Forty-six of the patients were males, four were females, and in seven the sex is unknown. Of these fifty-seven cases, forty-one recovered from the operation, four died, while in the remaining twelve the result is not given. The ages varied from seven to forty-nine years. The mortality did not exceed seven per cent. Thirty-two experienced temporary benefit; nine obtained no relief; four passed out of observation; four were operated on too recently to express any opinion; four were cured, and four died. The author concludes that traumatic epilepsy is practically incurable by surgical operations, and that a considerable number of such cases had better be relegated to the domain of pure medicine. But he believes that a certain number of patients in this class, on whom internal remedies have no controlling influence, may with propriety be operated on as a palliative measure. He assumes that surgery is responsible for the great majority of traumatic epileptics, and the old doctrine that depressed fractures of the skull without symptoms required no operative interference, in his opinion, has been the cause of very many of the unfortunate sequels of head injuries. A. F.

ECHINOCOCCUS OF SPINAL CANAL.

In the British Medical Journal, Nov. 28, 1891, W. B. Ransom, M.D., reports a case of the above, with operation, which although not successful in the result, shows learly that such treatment might in some cases be of ery great use. Hydatids of the spinal canal are, he ays, usually extra-dural and multiple, but their presence annot be diagnosed from benign growths, as fibro-myoma nd lipoma, unless other cysts are found elsewhere in the ody. The fact that they are usually multiple renders them ess amenable to surgical interference. A. F.

THE NERVOUS AND MENTAL PHENOMENA AND SEQUELÆ OF INFLUENZA.

In a paper read by Chas. K. Mills, M.D., before the Phila-lelphia County Medical Society, Jan. 13, 1892, the follow-ng opinions are expressed: Any infectious or toxic disease nay produce the same symptoms, or train of phenomena, ecause of the introduction into the system of an agent vhich directly and powerfully poisons nerve centres, and ossibly also nervous-conducting tissues. The nervous and nental phenomena of influenza are, first, those manifested n non-nervous organs, but traceable to a nervous origin. Some of the most prominent pulmonary, cardiac, and vascu-ar affections are best explained on neural theories. Pneu-nonias may result from vaso-motor paralysis; the peculiar orm of pulse and perverted heart's action, sometimes extend-ng even to paralysis, are nervous phenomena due to partial r complete paralysis of the inhibitory apparatus of the eart. Second, those symptoms and affections clearly rec-gnized as belonging to the nervous system include imme-iate acute and remote conditions, and in those predisposed, narked excitement or depression of the motor, sensory and nental nervous apparatus. Many who suffered from influenza uring the early period of the epidemic are still victims f profound neurasthenia, due largely to the cardiac weak-ess. The organic nervous diseases developed during or ollowing influenza are, in order of frequency, neuritis, neningitis, myelitis, and ceribritis, or various combinations f these inflammatory affections, as, for example, concurrent euritis and myelitis, meningo-myelitis, or meningo-enceph-litis. Almost every variety of neuritis, as regards location nd diffusion, is met, but the local is the most common, espe-ially, supra-orbital, intercostal, sciatic, and plantar. The rticular pain and other so-called rheumatic manifestations een during and after la grippe are best explained on the theory f infectious, neuritis or myocitis. Cases should be regarded s neuralgic in which pain is referred to certain nerve lines, ut in which pain on pressure and other phenomena of neuritis, s anæsthesia, vaso-motor and trophic disorders are absent.

The distinctly neuralgic pains are probably due to toxæmically depressed or exhausted sensory nerve roots or centres in the cord and bulb. Regarding the relations of influenza to insanity, he quotes the following conclusions arrived at by Dr. Leledy, and published in the Lancet, No. 3558: "1. Influenza, like other febrile diseases, may establish a psychopathy. 2. Insanity may develop at various periods of the attack. 3. Influenza may induce any form of insanity. 4. No specific symptoms are manifested. 5. The rôle of influenza in the causation of insanity is a variable one. 6. Influenza may be a predisposing or exciting cause. 7. In all cases there is some acquired or inherited predisposition. 8. The insanity is the result of altered brain nutrition, possibly toxic. 9. The onset of the insanity is often sudden, and bears no relation to the severity of the attack of influenza. 10. The curability depends on general rather than special conditions. 11. The insane are less disposed to influenza than the sane. 12. In rare instances influenza has cured psychosis. 13. The insane may have mental remission during the influenza. 14. There is no special indication in treatment. 15. Influenza may lead to crimes and medico-legal issues." Dr. Mills endorses all of the above except in regard to there being no specific symptoms manifested. Though this in a general sense is true, he believes the most frequent type is a form of melancholia. While admitting that too free use of the numerous chemically powerful remedies employed in influenza may in a measure be responsible for the mental and nervous complications, he says that many of these remedies have proved of some value, and that the enormous consumption of a drug like antipyrin is a practical argument both for and against its use. A. F.

EPILEPSY MISTAKEN FOR URÆMIC CONVULSIONS.

(Medical News, Oct. 31, 1891.) After reporting two cases of epilepsy with albuminuria, mistaken for uræmic convulsions, Dr. James Tyson says that so far as any peculiarity of the convulsions themselves is concerned, there is no way of avoiding similar errors. The uræmic are in fact typical epileptic convulsions exhibiting the same varieties and degrees. But true uræmic convulsions do not repeat themselves at intervals of months or years at a time, and yet leave the patient apparently no worse for his experience. And if true epileptic convulsions happened to be accompanied by albuminuria, such albuminuria does not as a rule remain at a standstill, or grow gradually less, but increases, and is associated after a time with other phenomena of chronic Bright's disease, such as hypertrophy of left ventricle, œdema, and high vascular tension. A. F.

STATUS EPILEPTICUS.

G. R. Trowbridge, M.D., and C. B. Mayberry, M.D., in The Journal of the American Medical Association, Nov. 7, 1891, draw the following conclusions from a paper on this subject: On account of its association with epilepsy, status epilepticus should not be considered as a distinct disease, but merely a climax of the neurosis. It consists of two stages: a convulsive and a comatose, though the latter is sometimes replaced by a period of maniacal excitement. That there is no demonstrable lesion causative of the status. That the prognosis is unfavorable. That the treatment is in a measure symptomatic, but considerable reliance can be placed upon the hypodermic use of the hydrobromates of hyoscine or conine, combined with morphine.

A. F.

FUNCTIONAL BRAIN DEGENERACY.

J. T. Searcy, in The Journal of the American Medical Association, Nov. 7, 1891, says: Brain capacity is the result of ancestral and individual brain practice. The test of these qualifications are the grades of intellectual and ethical abilities, usually determined by the level the individual, the family, or the race occupies in competitive life. Degeneracies of brain ability are occasioned by brain inactivity, which is the principle method of deterioration; but whatever injures the brain structure impairs intellectual and ethical ability, whether it be traumatism, disease or defect, or abuse with drugs. A great field for the highest order of public sanitation is open in this direction, heretofore almost wholly unoccupied by our profession.

A. F.

NEURALGIA FOLLOWING FRACTURE SUCCESSFULLY TREATED BY OPERATION.

Reginald H. Sayre, M.D., in the New York Medical Journal, Aug. 22, 1891, records the case of a young man who had small-pox when an infant, which apparently caused such a degree of fragility of right femur that it was broken in nearly the same place on three occasions, each four years from the other, and caused by slight violence. Persistent neuralgia followed the last fracture, and lasted for six years up to the time of operation, in spite of various treatments. The relief of tension given by splitting up the fascia lata, which bound the muscles very tightly, was followed by cessation of pain, and as nearly three years have elapsed since the operation with no return of the neuralgia, Dr. Sayre believes the cure will be permanent. A. F.

ÆTIOLOGY OF ITCHING.

According to Dr. E. B. Bronson (Medical Record, Oct. 24, 1891), the primary cause of itching pertains to hidden molecular or dynamic changes within the sensory nervous apparatus, changes whose immediate effect has been presumed to be of the nature of a dysæsthesia, and whose only ostensible sign is the perturbed sensation. The accessory pathological causes he tabulates as follows: Predisposing causes.—*A:* A state of cutaneous hyperæsthesia, or excessive irritability of the cutaneous nerves. It may occur, (*a*) as the local expression of a general neurotic condition, congenital or acquired, in which case the simplest excitants, as friction of clothing, may evoke the sensation; or, (*b*) it may be due to local changes in the skin, attended with prolonged irritation of the cutaneous sensory nerves. A *B:* state of hypopselaphesia, *i.e.*, a state of impaired conduction in the cutaneous nerves of tactile sense. Though usually occurring as a concomitant of hyperæsthesia of the skin, it is possible that it may exist independently of the latter, as in atrophic conditions (more particularly in pruritus senilis), when, like hyperæsthesia, it may become the predisposing cause of itching. Exciting causes.—*A:* Irritations conveyed to the skin from the interior of the body, either as (*a*) reflex irritations; or as (*b*) irritations transmitted from nervous centres. *B:* Direct or local irritation, (*a*) from extraneous sources, *i.e.*, from such irritants as operate upon the surface of the skin; (*b*) from intra-cutaneous sources, comprising (*1*) lesions of trophic cutaneous diseases and their products; (*2*) toxic materials deposited from the blood; (*3*) effects of local nutritive disturbances, or deranged metabolism in the cutaneous sensory nerves; (*4*) spastic contraction of the arrectores pilorum muscles, which, though it may not of itself suffice to cause itching, is probably often associated with other causes as a contributory factor.

A. F.

OÖPHORECTOMY FOR NERVOUS SYMPTOMS.

In the Boston Medical and Surgical Journal, Dec. 17, 1891, Dr. J. J. Putnam writes, that when ovarian or uterine disease of moderate amount is associated with marked ner-nervous symptoms, whether these are of the nature of unusual local pain, or of a more general character, it is rarely the case that the local disease is alone at fault, and the physician should look carefully for other signs of the main trouble in the nervous system itself. By invigorating the general nervous condition patients can be made comparatively insensitive to local irritations. Personal temperament and influence play an important part in the treatment of neurasthenia and mental disorders, so a new physician may succeed where others have failed, and everyone may do better than he believed possible by choosing the best method, and relying upon it with sufficient persistence. Neither patient nor physician will devote the necessary zeal to the general treatment if the possibility of a more speedy cure by operation is kept looming in the background, hence the treatment selected should for the time be the only one. Oöphorectomy may sometimes cure neurasthenia by so-called "suggestion," that is, by influencing cerebral processes not ordinarily concerned in active consciousness, but having a great deal to do with the nutrition and sensitiveness to pain, and some other means may be found for exerting this influence. Electricity, the "rest-cure," and hyponotism may act in this way. Regarding the kind of cases in which the operation is justifiable —apart from non-medical consideration—the serious typical neuroses, especially epilepsy, are rarely benefited, and the less so in proportion as the symptoms are of definite character and independent in origin of the pelvic disease. That nervous symptoms are worse at the menstrual period does not necessitate the conclusion of an important causal connection between the two events. It is also incorrect to conclude that because a woman has neurasthenia or hysteria, even if on an hereditary basis and independent of pelvic irritation, it is therefore impossible that the removal of such irritation or the induction of a premature menopause could be a means of cure. This does occasionally happen, but not often. A. F.

THERAPEUTICAL.

OPERATIVE TREATMENT OF DEFORMITIES RESULTING FROM INFANTILE SPINAL AND CEREBRAL SPASTIS PARALYSIS.

In the Medical News, Dec. 19, 1891, De Forest Willards, M.D., Ph.D., states that the deformities of infantile paralysis are preventable by apparatus, but if distortion has occurred, secure the best possible limb by immediate surgical procedure, and in some way make the patient walk. Apparently hopelessly distorted cases can be put upon their feet, and even great deformity does not contra-indicate an attempt to straighten the limb and give the individual the power of locomotion. Atrophied limbs can be straightened and incorporated as a part of the locomotive apparatus. Exercise will develop even badly shrunken limbs and continuous improvement may be expected. In the majority of cases surgical measures are preferable, after which mechanical appliances should be employed. Tenotomy or myotomy, while not curative, promotes the health and happiness of the patient. In spastic cases relapse is more common than in infantile paralysis, but the great benefit to body and mind secured by locomotion amply repays for the attempt at rectification. A. F.

Obesity (Dietetic Gazette, Dec. 1891). A French journal recommends a simple mode of dieting for curing obesity, which is attributed to an army doctor. A colonel, who was threatened to be retired from the army, as he was so heavy that it required two men to lift him into the saddle, became thin in a few weeks, and to such an extent that he had to take means to recover what he had lost. The means consisted simply in not eating more than *one* dish at any meal. It is said by doing this the stomach never takes too much. Nevertheless nothing but the one dish should be taken ; no condiments or soups or supplementary dessert should be allowed. A. F.

SPASMODIC WRY NECK.

Noble Smith, F.R.C.S., Ed., in a recent publication endeavors to show that neither drugs, local applications, nor other general methods are of permanent use in the treatment of well-established wry neck. That electricity has failed to do permanent good, except in some recent cases. That nerve-stretching cannot with certainty be depended upon. That section and ablution of a piece of the spinal accessory nerve is certain to remove all spasm from the muscles supplied by that nerve, and is very likely to remove spasms set up in other muscles, although other nerves are apparently involved. That the most satisfactory plan of operation is section of the nerve upon the inner side of the sterno-mastoid before it enters the muscle. That when other muscles remain spasmodically affected, the spasms may be removed by section of the nerves supplying those muscles. That operations of section of the spinal accessory nerve, and of the posterior roots of the cervical nerves, are not followed by serious inconvenience from paralysis of the muscles. That there seems to be no risk of the reunion of the nerves, and return of the spasms after operation. A. F.

THE SULPHATE OF DUBOISIA IN MENTAL DISEASES.

Preiniger has used the sulphate of duboisia as a culmative and hypnotic in mental affections with good results. The action of this agent much resembles that of hyoscine, while its inconveniences when given in too strong a dose are the same. When administered to an insane patient, sleep sets in from ten to twenty minutes, and lasts from one to eight hours. Sometimes the sleep is of short duration, yet, on awakening there persists a somnlent condition and prostration which more or less takes its place. If the dose be larger than two-and-a-half to three mgrms, the patients become agitated, the extremities jerk, the pulse becomes accelerated, the respiration increases in frequency, and the temperature rises—even hallucinations may set in. The peculiar idiosyncrasis of patients with regard to occustecination, and its intensity of action should be borne in mind. The maximum dose for subcutaneous use, and which should not be increased, is two mgrms.—Administered by the mouth it sometimes does not act. (Le Bulletin Médical, No. 88, 1891.) F. H. P.

TRAUMATIC EPILEPSY; OPERATION; NO LESION FOUND, YET FOLLOWED BY GREAT IMPROVEMENT.

Marchesano reports the case of a man, forty-three years of age, who, at the age of fourteen was kicked in the head by a mule, and in consequence had since suffered from epileptic spasms. At the age of thirty-seven the fits became more severe and frequent, were followed by intense headache, or delirium, with an inclination to injure his wife and children. On his entrance to the Palermo Asylum an irregular cicatrix was noticed in the right frontal region, immediately above the middle of the eyebrow. This scar. of about two inches in length, lay in a depression in the bone, and was adherent to the subjacent tissues. From this the epilepsy was thought to be of traumatic origin, and an operation advised. A trepan was applied, which covered the entire depression, and a disc of bone removed. The internal table was found normal, the depression being entirely limited to the external. The dura mater was excised and found, together with the other meninges, to present nothing abnormal. The wound was closed and treated antiseptically. Beyond a slight fever the following night its further course was a fibril. On the third day following the operation an attack came on; another appeared on the eighth day. By the twentieth day the cicatrix had completely formed, and the wound so contracted as to leave scarcely a sign of the depression. The headaches disappeared, the attacks became less frequent and lighter, and were not followed by delirium. The writer is at a loss to explain the manner in which the operation acted in this case, as well as to understand the relation of the disease to the wound, yet he would regard the result as another new and favorable argument for trepaning in epilepsy, following traumatic lesions of the cranium.—(La Sicilia Mèdica, Nos. 5 and 6, 1891.) F. H. P.

SUCCESSFUL OPERATION FOR SUB-DURAL HÆMORRHAGE.

G. Ekehorn reports the case of a glass-worker, of healthy parents, and in good health, who, May 10, 1891, while drunk, was struck over the eye and knocked down, striking his back and head upon the sidewalk, and becoming unconscious. On coming to himself he could not rise, was giddy and felt benumbed all over. No hæmorrhage from his mouth, ears, or into the conjunctiva. The wound over the left eye was of no importance. Somewhat to the right of the occipital protuberance a horizontal wound, two-and-a-half centimetres long, and with sharp borders, was found. No fracture, impression, or fissure of the cranium could be discovered. The patient was fully conscious, yet somewhat soporous, he answered questions well, yet with an exertion, and complained of pain in the forehead, vertex; and occiput. Vision was not distinct; it was difficult to fix his eye on an object. The pupils were contracted, of equal size, did not react to light, and accommodation was difficult. No paralysis, spasms, or anæsthesia, yet he was so weak in his legs that he could not walk, and on attempting it would stagger from vertigo. Respriation deep, slow and long, with long pauses between. Pulse 84, full and good. The next day he was somewhat soporous, answered questions with difficulty; towards evening he talked somewhat confusedly; now and then his left arm and leg twitched. Pulse 84 in the morning, 80 in the evening, respiration more regular. Ophthalmoscopic examination was impossible. The following day headache. During the morning an epiletiform attacks appeared, with tonic and clonicles spasms of the muscl of the left side of the face, and of the left arm and leg, so that the whole body was shaken. The upper eyelids were drawn up, the eyeballs outwards and upwards, and the pupils were dilated. Chewing movements. The next two days he had two other fits, headache, became restless, and tossed about. The day of the operation he had from 5.30 in the morning till 12.15 in the afternoon, twenty-two attacks; after one of these, which came on at 8 o'clock in the morning, his left arm and leg were completely paralyzed. The facial nerve was not involved. Up to the time of the operation he had been treated with morphine, the bromide and iodide of potash, ice, etc. At 12.15 trepanation was performed with the chisel, according to the classic method of finding the middle meningeal artery. After a hole, of the size of a two-cent piece, had been chiseled into the cranium, the dura mater, though tense and darkish brown shining, presented no signs of blood. An incision into it allowed a jet of dark brown and thin blood to spurt out for several centi-metres, after which about 150 grammes of blood and clots were removed, and it was irrigated with a boric acid solution. No fissure; neither the source of the bleeding could be discovered. That afternoon the patient could move his left *leg*; the next day both arm and leg could be easily moved. The days immediately following he became restless and tried to tear off the dressings, and was put into a straight-jacket. Six days after the operation he was quiet, and eight days after he could read papers and novels. The spasms continued, although less severely, and on the fourth day after the operation they disappeared entirely. The wound healed well. The headache gradually decreased, and diplopia, which he had after the operation, also disappeared, and, finally, one month and seven days after operative interference he was discharged well.—(Hygica, No. 10, 1891.) F. H. P.

PSYCHOLOGICAL.

THE EFFECTS OF SULFONAL UPON THE CIRCULATION.

The conclusions arrived at by Dr. Sgobbo Francisco, of Naples (Annali di Neorologi, Fas. II, 1891), are:

1. That sulfonal is a good hypnotic.
2. That given in doses of 3 grammes it exerts an influence upon the heart and blood vessels, reinforcing the systole and increasing the vascular tone. This action upon the blood vessels is not continuous, for after a certain time there is a dilatation, and a progressive loss of elasticity, beginning first in the vessels of the brain, then extending to the periphery. W. C. K.

Society Reports.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Stated Meeting, December 28, 1891.

The Vice-President, Dr. Wharton Sinkler, in the Chair.

Dr. S. Weir Mitchell read a paper entitled

A CASE OF ACROMEGALIA.—THE PATIENT EXHIBITED.

BY DR. H. A. HARE, M.D.

I have brought this patient before you as an interesting instance of that rather rare disease known as acromegalia; and while the condition has not progressed in all its details sufficiently to enable me to state positively that this is a typical case, our limited knowledge of the disease under consideration seems to me to point to this being an undoubted instance of the malady. It has been suggested to me by Dr. Stewart that the case is one of myxœdema, but I am unable to think that she presents in any respect evidences of this curious condition. In the first place she lacks the characteristic slowing of the speech, neither has she the slowing of the mental processes or of the gait. Atrophy of the thyroid gland is an almost characteristic lesion of myxœdema ; whereas in the case which we have before us the thyroid gland is very much increased in size. Neither is the facial expression of the woman characteristic of myxœdemia. There is, as you see, a general enlargement of the tissues of the face, and associated with the increase in the development of the soft tissues there is certainly an increase in the size of the bones practically all over the body. There are a number of bony enlargements in excess of the symmetrical development of the chest. Anteriorly, on the right side, near the sternum, you will notice that the second, third and fourth ribs are much increased in their length, and an examination further shows that the three lowest ribs on the left side are similarly increased in size. The tissues of the limbs, both upper and lower, are increased also, and the patient has, during the past two years, gained sixty-five pounds in weight, although as you see no one would at the present time consider her to be a stout woman. The curve in the spinal column and the rounding of the shoulders exactly resembles that which is seen in all the cases of acromegalia so far reported, which have been well developed, and the expression of the face so closely resembles the expression seen n the picture in Leite's recent thesis upon this subject as to cause the remark that the two patients look enough alike to be brother and sister, or even to be twins. Associated with the general symptoms there is complete loss of vision through atrophy of the optic nerve on the left side and durng the last two or three weeks there has been marked diminution in the vision of the right side, which ophthalmoscopic examination proves to be due largely to what is probably an axial optic neuritis; there is also paralysis of the nferior oblique muscle on the left side.

Finally, in regard to the possibility of the case being one of myxœdema, let me say that she lacks practically every symptom of this disease except the increase in the subcutaneous tissues, and that she has not the supra-clavicular sweling which is generally found in the malady described so horoughly by Dr. Ord.

Dr. G. E. DE SCHWEINITZ: Through the courtesy of Dr. H. A. Hare, and Dr. Hansell, I examined this case. It is nnecessary to repeat the result of the examination, which oincides in all practical particulars with the one reported by Dr. Hansell. I may, however, refer to one point that is nteresting, namely, the very marked failure in the percepion of green, and the fact that there is a faint, negative scotoma occupying the centre of the field of vision, in which area this color ceases to be appreciated. It reminds one a little of the scotoma in toxic amblyopia, and suggests a line of inquiry. The whole appreciation of the color green, however, is so very deficient that it is difficult to determine the limits of this scotoma. In addition to this case I have examined one other case of supposed acromegalia, in which there was bilateral temporal hemianopsia, a lesion which has been seen in a number of cases of this affection, because there has been disease of the pituitary body, which from its anatomical situation would necessarily produce this defect in the field of vision. From the account of the way in which vision was lost in the blind eye of Dr. Hare's case, it seems as if it had begun as a hemianopsia, although the field of vision of the right eye does not show this character. In one case of suspected tumor of the pituitary body which I have observed, but which was not examined post-mortem, there was excessive sweating, especially of the hands and feet. A somewhat similar condition is present in the patient who is here to-night.

Dr. JOHN CHALMERS DACOSTA: Would the absence of any special evidence of mental involvement negative the presence of myxœdema? In the two cases of myxœdema that I have seen, the mental involvement was not coincident with the development of the disease. The mental condition in the case we investigated was one of gradually arising and progressive dementia. It was scarcely manifest until the myxœdema had existed for some time.

Dr. F. A. PACKARD: I am especially interested in this subject because this year I came across a case which I at first thought to be one of this disease. I, however, learned better, and had hoped to be able to show here an interesting example of the disease which has been called by Marie Osteo, arthropathe hypertrophiante pneumique. It has been claimed that this is the real disease from which many cases of so-called acromegalia suffer. Since the appearance of the paper by Marie in the Révue dé Médicine, 1890, quite a long monograph has appeared in Germany, giving the results of the post-mortem examination in Friedreich's case of Hagner, where every bone in the body was found tremendously enlarged.

In Dr. Hare's cases there is absence of the large inferior maxillary, which is a prominent symptom in many of the reported cases. There appears, also, to be very little enlargement of the bones of the hands. The enlargement seems to be chiefly in the soft parts, much like that which occurs in myxœdema.

A CASE OF ACUTE MYELITIS OF THE DORSAL CORD.—EXHIBITION OF THE PATIENT.

BY DR. WHARTON SINKLER.

Edward Jones, æt. forty-one; married; born in England; occupation, laborer in bolt and nut works. He has never had any serious illness and denies any venereal disease. He has been a moderate drinker, but smokes excessively. He has lost the right eye—by an accident he says, four years ago. Patient applied for treatment at the out-service department of the Infirmary for Nervous Diseases October 5, 1891. He states that two weeks ago he was intoxicated, that it had not been his habit to drink heavily, but on this occasion he was much under the influence of liquor at night. He felt no ill effects from it, but a week later, that is on Monday morning, Sept. 28, he found on coming down stairs that his legs were weak; that although he could walk, he was not able to go to work. He had no pain in the legs or back and no numbness or formication in the legs, but there was slight numb feeling in both hands. He had no illness or indisposition of any kind preceding the loss of power in his legs. He walked dragging his legs and shuffling along the floor, the chief difficulty seeming to be in the flexors of the thighs. He stood with eyes shut without difficulty although there was some sway even with the eyes open. The knee-jerk was absent and not reinforcible. The elbow-jerk was also absent. There was some slight incoördination in the movements of his hands apparently due to weakness. Sensation to touch and localization in hands good. Dynamometer, right 120, left 115. On examination of the spine it was found straight; no pain or tenderness on percussion or pressure, and all of the movements of the trunk were free. The muscular condition over the body is good. There was no wasting and the muscles everywhere responded normally to the faradic current. There was no loss of power in the bladder or rectum. The heart sounds were normal. The pupils moderate in size and reacted to light and to accommodation. He was ordered to take fluid extract of ergot, half drachm three times a day. One week later his wife came to report that his condition was very much worse; that he was unable to walk or indeed to support himself on his feet. He was therefore admitted to the hospital October 13, 1891. On admission the following note was made : The patient is unable to stand, but he can move his legs in every direction feebly, and as if they were very heavy. Sensation is everywhere perfect, both in the hands and in the legs, the sharp point of a pin being readily distinguished from the head. Power of localization also good. Tendon reflexes entirely absent. He has good control over anal and vesical sphincters. He has no headache or dizziness, and has had no convulsions. His sexual appetite is lost and he has no power of erection. He sleeps well and has a good appetite. He can flex the legs when in a recumbent position, but he is unable to do this if even slight resistance is offered. The skin of the soles of his feet is dry and harsh. The plantar reflex is present as is the cremasteric. The electrical examination shows no loss to the faradic current. Patient was ordered rest in bed, massage, and the ergot to be continued. On Oct. 26, patient had lost strength still farther. He was barely able to move his legs in bed, but there was no loss of sensation, although the compass points are not differentiated at less than two inches on the soles of his feet. There is no pain, aching or numbness felt in the legs. Three days ago there began to be loss of power of the bladder. This was relieved temporarily by hot fomentation over the abdomen. To-day he complains of violent pain in the rectum with involuntary movements of the bowels. He has complete loss of control over the sphincter ani. Examination per rectum shows relaxation of the sphincters and the bowel filled with a soft fæcal mass. The paroxysms of pain in the rectum were so severe that the patient had to be kept under the influence of opium for several days. Sometimes an opium suppository was sufficient, and other times a hypodermic injection of morphia was necessary. There was paralysis of the bladder and the urine was drawn by catheter twice or three times in the twenty-four hours. November 1, the ergot was discontinued and iodide of potassium, ten grains three times a day, was ordered, the dose to be increased by one grain three times a day. The patient's temperature was not above normal. He became very much prostrated generally, and was unable to take any but liquid nourishment on account of anorexia. November 20, there was improvement in his condition. The attacks of pain in the rectum were not so frequent, and the power of the bladder had been regained. He was able to move the legs rather more strongly. The patient's condition improved steadily from this time onward, and by December 1 he had entirely regained control over both anal and vesical sphincters. On December 25 he was discharged from the hospital, and he was able to walk well and without dragging the feet or stumbling. He stood firmly, and there was no sway while the eyes are open, but when the eyes are closed there is a slight sway, hardly more than normal. The knee-jerk could be reinforced, but was absent without reinforcement. The muscles were firm, and were not wasted, and they responded freely to the faradic current. The treatment during the last six weeks in the hospital consisted in the administration of the iodide of potassium in ascending doses; the maximum dose reached was fifty-four grains three times a day. Massage and the faradic current were used daily.

On exhibition of the patient he walked without difficulty, and seemed to have entirely regained his muscular power. The knee-jerks are slightly present, but are marked by reinforcement.

This case was of interest to me from its resemblance to one which I reported to the American Neurological Society, and in which Dr. Burr made a microscopical examination. In this case there was paralysis of the legs, rapidly extending to the upper extremities and face, the patient dying of respiratory paralysis. At the autopsy we found not a poliomyelitis, as I had anticipated but a diffused transverse myelitis of the cervical cord. It seems to me that in this case there might have been a similar condition, and that the hyperæmia or myelitis did not go so far as to cause degeneration of the nerve cells of the anterior horn.

Dr. WILLIAM J. HERDMAN, of Ann Arbor, Michigan, who was present, exhibited, by invitation, photographs of a case of intra-cranial tumor. The case came into the University Hospital (Michigan) a year ago. The symptoms very closely resembled those of glosso-labio larnygeal paralysis. There was also decided paralysis of the limbs. She could sit erect in a chair, but could not get about. She had scarcely any pain. The tumor was as shown, at the base of the brain, and had involved the fifth nerve on the right side. The gasserian ganglion was eroded away. Another peculiar thing was that although two ophthalmological examinations were made, no changes were found in the retina. Yet she had loss of sight of the right eye and the tumor must have caused serious obstruction of the circulation on that side. The tumor had caused erosion of the petrous portion of the temporal bone. The exact nature of the neoplasm, which was subdural, had not yet been determined. It was thoroughly encapsulated by a layer of fibrous tissue, but in removing it the sac burst at one point, and caseous material escaped resembling that seen in degenerated tubercle deposits, yet there was no evidence of tubercular disorders in other parts of the body.

Book Reviews.

KLINISCHE UND ANATOMISCHE BEITRAGE ZUR PATHOLOGIE DES GEHIRNS (Clinical and Anatomical Contributions to the Pathology of the Brain). By Dr. S. E. HENSCHEN, Professor in the University of Upsala. Vol. I., Upsala, 1890.

In his preface to this very remarkable work, Professor Henschen intimates that if the pathology of the brain is to keep pace with the advances made in cerebral anatomy and physiology, new material must be carefully studied and recorded. The volume before us is an anatomical and pathological study of disease in various parts of the visual tracts. It is a quarto volume of 215 pages, with thirty-six plates, superbly and accurately executed, and a number of perimeter charts.

A number of interesting clinical contributions add to the interest of the work. No one (neurologist, or ophthalmologist), interested in the question of hemianopsia should fail to consult this work. The subject matter is treated in fourteen sections and embraces the following topics:

I. On the secondary changes of the optic tract in a case of atrophy of both eyes.

II. The visual tract in one-eyed persons.

III. Changes in the visual tract.

IV. Hemianopsia the result of gummatous basilar meningitis.

V. Tumors of the chiasm.

VI. Hemianopsia caused by hæmorrhage into the thalamus.

VII. Hemianopsia resulting from softening of the optic radiations.

VIII. Visual defects in consequence of disease of the optic radiations in both hemispheres.

IX. Cortical hemianopsia.

X. Tumor formation in the optic radiations without hemianopsia.

XI. Changes in the occipital cortex without hemianopsia.

XII. The visual tract after disease in the optic radiations.

XIII. Contributions to color hemianopsia.

XIV. Clinical contributions to hemianopsia.

From the list of subjects, it is evident that the question of hemianopsia and other visual disturbances has been most carefully considered. The study of degeneration from disease, as given in sections I., II., III. and XII., is perhaps the most valuable part of this monograph, as it surely involved the most arduous work.

The purely clinical contributions are of great interest also, and they include several cases of infantile palsies with hemianopsia; it is a pity that Prof. Henschen could not obtain an autopsy in a case of this class, which to the reviewer's knowledge has not yet been made the subject of careful post-mortem examination. It is probable that cortical changes alone will be found to explain the association of paralysis with hemianopsia in these cases.

We hope that this slight gap may be filled in by the author's later researches (he promises to continue these contributions to pathology); but it is unjust to speak of a "gap" or defect in a work which will take a foremost rank among the contributions made to the advancement of neurology during the last two decades. B. S.

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APRIL, 1892.

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"In *all* cases of *Bright's Disease of the Kidneys*, I have found *Buffalo Lithia Water of the greatest service in increasing the quantity of urine and in eliminating the Albumen.* In certain cases of *Melancholia*, accompanied by *excessive eliminations of Urates and Uric Acid, it is often the only remedy necessary.* In *Gout and Rheumatism* it is highly beneficial, and in many cases of *Impotence* its *restorative* qualities have been of *undoubted assistance. I have long regarded Buffalo Lithia Water as the most valuable mineral Water in use.*"

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"*I feel no hesitancy whatever in saying that in Gout, Rheumatic Gout, Rheumatism, Stone in the Bladder*, and all Diseas of *Uric Acid Diathesis*, I know of *no remedy at all comparable to it.*

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TUMOR OF THE CEREBELLUM WITH REPORT OF CASES.[1]

By G. J. PRESTON, M.D.,
Baltimore, Md.

THE subject of tumor of the cerebellum is important on account of the relative frequency with which new growths occur in this locality, and also, because they can in many instances be localized with sufficient definiteness to warrant an attempt at removal. It has only been of recent years thought possible to localize growths of the cerebellum, and most modern writers pay rather scant attention to this subject. Even such an acute diagnostician as the late Hilton Fagge expresses his doubt as to whether localization of cerebellar tumor is not sometimes due to luck rather than skill. A careful review of the reported cases of the past half-dozen years will show how entirely possible it is to definitely localize new growths of the cerebellum. Of course, we know that, now and then, an autopsy reveals a large tumor of the cerebellum, which had apparently produced no symptoms during life, yet we cannot help feeling that if a more careful examination of the patient had been made symptoms would have been elicited which would have revealed the nature of the case. The relative frequency of tumor of the cerebellum is well shown in the collection of cases reported by Gowers. In 650 cases of intra-cranial new growth, 295 were in the cerebrum, and 179 in the cerebellum. If we consider the much smaller size of the cerebellum, it becomes obvious that it is more liable to new growths than the great brain. Tumor of the cerebellum may occur at any age, though, perhaps, it is more common in early adult life. Certain varieties, as we shall see, are peculiarly liable to occur in the first decade. As to the variety of tumors, we may have first, those dependent upon certain diathesis, as tuberculosis and syphilis. Tubercular growths are more frequent in the cerebellum than in other parts of the brain, and are met with especially in children.

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[1] Presented to the American Neurological Society, at Washington, meeting of September, 1891.

Hale White says, bearing in mind the autopsies at Guy's Hospital, "A cerebellar tumor in a child is almost certainly tubercular." Tubercle may invade the brain from the meninges, or may take its origin in the adventitia of the vessels. In the brain it forms a roundish mass known as *solitary tubercles*. In a large number of instances tubercular disease is present elsewhere in the body.

Syphilitic tumors occur not infrequently, and are seen after the acquired, and possibly in the hereditary form of the disease. The growth or gumma takes it origin from the meninges, but often extends into the substance of the brain, though its origin can usually be traced to the meninges. It is well to remember in regard to both tubercular and syphilitic growths, that they are often multiple.

Glioma is a very common form of tumor of the brain, met with more often in the cerebrum than in the cerebellum. It is made up of branched neuroglia cells and often closely resembles sarcoma. It may form a firm mass, or exist as a soft infiltration. Several varieties of this tumor are described as glio-myxoma, glio-sarcoma, etc. Sarcoma is frequently met with, the most common variety being the spindle cell.

Many other kinds of tumor are occasionally found in the cerebellum : carcinoma, parasitic cysts, fibroma, and others.

When we come to study the symptomatology of tumor of the cerebellum, we must first consider certain general symptoms common to all forms of intra-cranial growth independent of their locality. The symptom that is usually first observed by the patient, and for the relief of which advice is sought, is pain. The nature of the headache is sometimes a dull, boring pain, at others, a most intense agony. The noticeable feature is its constancy. There are exacerbations and remissions, but at all times more or less distress, rarely a moment of freedom from pain. When a patient complains of persistent pain in the head for months, tumor of the brain is always suggested. The pain is generally either frontal or occipital, sometimes general and not localized.

It is hard to say just how the pain is caused. In most instances it is caused by pressure directly or indirectly upon the meninges, sometimes by the general intra-cranial pressure. Moderate compression of brain substance would not seem to occasion pain. The value of the location of the pain is not very great in general, but seems to be worth more in determining tumor of the cerebellum than elsewhere. In a very considerable proportion of cases of tumor of the cerebellum, the pain is distinctly occipital and is often felt in the back of the neck. This is often due to direct pressure upon the tentorium. Tenderness on percussion, if carefully done, is of distinct value. If the skull is gone over with a percussion hammer, making light, regular taps, very often a certain area, corresponding roughly to the site of the tumor, shows marked sensitiveness. I have confirmed this fact in a number of instances, not only in tumor of the cerebellum, but in the case of tumors located elsewhere in the brain, especially if the growth be near the surface. Another symptom common to all intra-cranial growths is optic neuritis, which will be considered later in connection with affections of the cranial nerves generally, by cerebellar tumor.

Very early in the course of the disease is noticed the peculiar staggering, drunken gait: the characteristic cerebellar titubation. It differs very greatly from the highstepping gait of tabes, or the unsteadiness produced by paralysis of various sorts. It resembles the gait of a child learning to walk, or that of a person who first tries to walk after a prolonged and exhausting illness. There is a great uncertainty of movement, an impossibility to preserve the equilibrium. What the cause of this disturbance of locomotion is, has been a matter of some dispute. Hughlings Jackson attributes it to paresis of the spinal muscles. It would seem to be due in some cases, or at least to be exaggerated, by loss of muscular sense. From our studies in comparative anatomy we know that the cerebellum must be a very important factor in the regulation of bodily movements, and, as some observers think, presides over muscle tonus. We can, perhaps, better explain the peculiar gait of cerebellar disease by thinking of an impairment of those several functions of the cerebellum, with possibly some weakening of the spinal muscles. The motor disturbance is confined mainly to the lower extremities, the arms being rarely affected. Closing the eyes has very little if any tendency to increase the titubation. Rotary movements and movements of manège are not infrequently met with, though usually in rather slight degree, compared with such movements as are produced by operations on the cerebellum of the lower animals. Disturbance of equilibrium results, according to Nothnagle, only when the middle lobe is involved or compressed. While the conclusions of Ferrier and others in regard to the tendency of an animal to fall toward the side of the injury cannot be strictly applied to disease of the human cerebellum, still there is in this latter case a general tendency to conform to these conclusions. Particularly is this the case, I think, when the lesion involves the middle, and, perhaps, the other peduncles. If the lesion involve one lateral lobe, pressing on the middle lobe from that side and involving the peduncles, especially the middle peduncle, there is a most decided tendency to fall toward that side. It is doubtful if it makes any difference whether the pressure be exerted on the anterior or posterior part of the middle lobe, either causing the patient to fall forward or backward, but not distinctly to one side.

The older experimenters (Flourens and Renzi) claimed that destruction of the anterior part of the middle lobe caused the animal to fall forward, of the posterior portion, to fall backward. In one of the cases I report the tendency was almost invariably to fall backward. This was carefully and repeatedly tested, and the autopsy showed a tumor pressing upon the anterior portion of the vermis. In another case the patient would incline toward the left side and fall if not supported; the tumor in this case involving the left middle peduncle and slightly compressing the vermis on that side.

In some cases of cerebellar tumor muscular weakness is decided, but distinct hemiplegia is not common. Vomiting is by no means a constant symptom, and would seem to be due in some cases to the intense pain.

Sexual excitement, which the older writers attributed to disease of the cerebellum, is rarely, if ever, present in these cases.

The deep and superficial reflexes are, as a rule, unaltered, though there are many exceptions to this since we may have the motor tract involved. In a few cases the deep reflexes are lost, though there can be no very satisfactory explanation of this condition; more often the deviation from normal is towards exaggeration. Sensation is usually not affected, except in cases of pressure upon the cranial nerves. Of course, it is possible to have a hemianæsthesia, as we may have a hemiplegia, since a tumor may be so situated as to involve the sensory or motor tracts, but these cases are exceptions.

A symptom that has not been very often mentioned is loss of muscular sense. In one of my cases it was very marked, and distinctly, though to a less degree in the other two.

One of the most valuable symptoms of intra-cranial growth is optic neuritis. If optic neuritis be present along with some of the symptoms detailed above, the diagnosis of cerebellar tumor is reasonably certain. Tumors of considerable size may be present unaccompanied by this symptom, so that its negative value is not very great.

Space does not permit the discussion of the interesting question of how the growth produces the neuritis. It is important to bear in mind the fact that a very considerable degree of optic neuritis may exist without any very apparent interference with the vision, hence an ophthalmoscopic examination of the eyes is of great importance in any case of suspected intra-cranial growth. Moreover, in doubtful cases, it is important that the examination of the eyes be made by one skilled in the use of the ophthalmoscope. When the condition is well marked it is easy to recognize, but in early and slight cases it is often a difficult matter to say whether neuritis be present or not. While impressed with the great importance of this symptom, I would not be willing to go as far as Hale White does in the paper referred to, where he says, "we may conclude that optic neuritis is rarely, if ever, absent in intra-cranial growths."

Nystagmus is seen in tumor of the cerebellum, but is not a very constant symptom. The pupils show no constant alteration. Hearing is occasionally affected by pressure on the auditory nerve or its nucleus. Taste in the same way may be abolished. Other cranial nerves may be involved, of course, according to the situation of the tumor. One symptom that I have noticed particularly, is pressure upon the medulla, interfering with respiration and deglutition. I have seen this symptom in a very slight, hardly noticeable degree at first, gradually increase until death occurred. General convulsions have been noted, but are not very common. Rigidity, which may be slight, or may amount to tonic contraction of the muscles of the neck, often drawing the head back upon the shoulders, is a very common symptom of cerebellar tumor, and may be almost said to be characteristic. Slight mental disturbance is frequently seen, though many authors deny any impairment of the intellectual faculties.

In one of my cases there were furious maniacal outbursts. It is very important, as has been pointed out, to bear in mind the anatomy of the cerebellum and its relations with the rest of the brain, the medulla and the cranial nerves, since so many important structures may be pressed upon by a growth which is entirely within the cerebellum, but causes more or less displacement and consequent compression.

As illustrative of the symptomatology of cerebellar tumor, I give here three cases. The first has been reported before, the other two appear for the first time.

CASE I.—Male, aged 36; white; mechanic. General health always good; no syphilis. At one time had colica pictonum, but no neuritis followed. About eight months before admission into hospital he began to have pain in the back of his head and neck, and noticed some staggering in his gait. These symptoms gradually increased. When first seen his condition was as follows: Very marked mental hebetude, although he could answer questions in the main intelligently. Both sight and hearing were greatly impaired. Pupils moderately contracted, and reacted very sluggishly; slight nystagmus. There was no paralysis, and patient's muscular strength was remarkably good considering his long illness. General sensibility was unimpaired. Muscular sense was almost totally gone, both for arms and legs. The reflexes, superficial and deep, were rather diminished, though all present. Patient was unable to stand or walk without assistance. The moment support was withdrawn he fell backwards; no tendency to fall to either side. Complained of pain in occipital region and nape of neck, and there was decided tenderness on percussion over the occipital region. The diagnosis of tumor compressing middle lobe of the cerebellum was made, and as there were no symptoms of pressure upon the medulla, operation was advised, which patient's friends refused.

Death took place very suddenly and unexpectedly. Autopsy made twenty hours after death showed a tumor the size of a partridge egg, bi-lobed and of rather firm consistency, springing apparently from the posterior part of the corpus callosum and attached slightly to the falx and tentorium. The tumor pressed directly on the middle lobe of the cerebellum, riding it like a saddle, and flattening somewhat the corpora quadrigemina. Section of the hardened tumor showed under the microscope a certain number of very fine fibres running through the mass, with a few glia cells; there were many large round cells, small round cells and spindle cells, constituting what might be called a glio-sarcoma. Brain meninges and cord otherwise healthy.

CASE II.—Male; white; aged 25; farmer. Family and personal history good. Says he has suffered with severe headache since he was fourteen years old. When admitted into hospital he complained of most intense, agonizing headache, and marked stiffness of the neck. Would lie generally on his face with his head buried in the pillow. At times the paroxysms of pain were distressing to witness. Very unsteady on his legs, and would fall unless supported. No tendency to fall more to one side than the other. Stands as well with eyes closed as open. Strength little if at all impaired, and muscles well nourished. Reflexes somewhat increased, with slight ankle-clonus of left foot. Slight loss of muscular sense. Tenderness over occipital region on percussion. Paralysis of right internal rectus muscle, with slight weakness of left. No optic neuritis.

Patient was admitted on June 30 and became rapidly worse. Pain grew more intense and symptoms of pressure upon medulla appeared. Respiration became irregular and deglutition was difficult. Diagnosis of tumor of middle lobe, deeply situated and pressing upon the medulla, was made and operation advised against, as it was thought that it would not be possible to remove the growth. Patient died suddenly July 12. Autopsy showed a tumor about the size of a small hen's egg, attached apparently to the anterior medullary velum and superior peduncles, and growing deeply into the vermis. The tumor was of rather firm consistency and microscopic examination showed it to be a spindle-cell sarcoma. No other lesion.

CASE III.—Male; white; aged 52; farmer. Family and personal history good. About two years before admission into hospital he began to notice some difficulty in walking, and was wrongfully accused of being intoxicated. Six months ago lost sight, which had been gradually failing.

Has a marked drunken, staggering gait; cannot stand with his feet together unless supported. Tends always to fall to left, and when supported just enough to prevent falling walks toward the left. If he is started up the ward by himself, or slightly supported, he invariably brings up against the beds on the left side of the room. Complains of pain in the occipital region and there is marked tenderness on percussion over the left occipital region. There is stiffness of the neck, with tendency to drawing of the head backward. No loss of general sensibility, except of the cornea of one eye. Slight loss of muscular sense. Slight increase of patellar reflex; no ankle-clonus. No paralysis and no muscular atrophy. There is double optic atrophy from neuritis. Pupils stationary, except when effort at accommodation is made. Almost complete anæsthesia of left cornea. No paralysis of eye muscles. Four days after admission the patient became very maniacal; tried to jump from the window, tore up the bed clothes, and had to be forcibly restrained.

Had unsystematized delusions and hallucinations. Finally fell into a comatose condition, with low-muttering delirium, and toward the last interference with respiration and deglutition. The diagnosis was made of tumor pressing on left middle peduncle and left lobe, and left side of middle lobe, with slight compression of pons at point of emergence of fifth nerve. Operation was advised. Patient died eleven days after admission into hospital, and autopsy showed a tumor the size of a small hen's egg, pressing on the middle peduncle of the left side and left lobe, and pressing slightly on the pons, compressing somewhat but not destroying the fifth nerve. There was no other lesion. Microscopic examination of the tumor showed it to be a sarcoma.

The ophthalmoscopic examination of these last two cases were kindly made for me by Dr. H. Friedenwald, and the microscopic preparations by Dr. N. G. Keirle.

Several other cases have come under my observation in which the symptoms have been unmistakable, but as they have not been confirmed by autopsy they cannot be used. The three cases mentioned, however, illustrate quite well the symptomatology of cerebellar tumor, and confirm to a certain degree the position taken, that it is possible to localize tumors of the cerebellum with some degree of exactness.

In regard to the course and prognosis of tumor of the cerebellum, little need be said. The results in nearly all cases are progressively and rapidly fatal. Two years might be put as the average limit. One of my cases gave a history of intense pain in the back part of the head for ten years previous to death, and it is reasonable to suppose that in this case there was a very slowly-growing tumor. Osler reports a case lasting perhaps fourteen years, as that was the duration of the headache, and later other symptoms appeared. Often the apparent duration is only a few months.

Possibly a small number of syphilitic tumors are cured by treatment, but when we have an undoubted syphilitic growth, we often fail with antisyphilitic remedies. This being the only variety of tumor that even theoretically could be benefited by treatment, we should try vigorous antisyphilitic medication in every case in which there is even a lurking suspicion of syphilis. Experience has taught me that the best way to introduce mercury rapidly is by inunction. This I combine with or follow by heroic doses of iodide of potash. Autopsies have shown that we may occasionally have tumors situated in the lateral lobes of the cerebellum without producing any symptoms, and these tumors sometimes become encysted and probably exist for many years without doing any damage.

The most interesting question, practically, about cerebellar tumors, is whether it is possible to remove them surgically. The results of intra-cranial surgery, brilliant as the operations have been, have not realized the great expectations that were raised by this daring interference. And yet in the case of brain tumor, with the few exceptions noted, surgical interference is not simply the last resort, it is the only resort. The dangers of operations on the brain have been reduced to a minimum, and it is the duty of every physician to put the case plainly before his patient, and not waste precious time vainly exploiting the hopeless theory of absorption.

While a very considerable number of tumors have been successfully removed from the cerebrum, and a few from the cord, I have not been able to find an instance in which the operation has been successfully performed in tumor of the cerebellum. A few cases of operation have been reported with fatal results. Two cases are reported by Suckling. In the first case the operation was performed by Jordan Lloyd, in a girl aged twelve. The tumor was a soft, infiltrating glioma, and hence could not be removed. The second case, reported by the same author, was operated on by Bennett May. It was a boy, aged seven years, with a tumor in the substance of the left lobe of the cerebellum, about an inch beneath the cortex. The operator says of the operation, "actual procedure found extremely easy of accomplishment, and of no great severity."

He states his belief that the case would have resulted favorably had the operation been attempted earlier. The third case is by Victor Horsley. Male; aged eighteen; tumor of the right lobe of cerebellum; died nineteen hours after operation.

The incision through the scalp in most instances began at the occipital protuberance and was curved downward, terminating near the mastoid portion of the temporal bone.

The trephine openings were large and were directed to the supposed seat of the growth. One important point in these operations is to enlarge the opening made by the trephine sufficiently to allow the parts to be well examined.

In the cases I have reported, the first, I am sure, offered a very easy operation. The tumor was small and lightly attached. The second case was not a suitable one for operation. The third case presented greater difficulties for an operation than the first, but could, I think, have been removed if a sufficiently large opening had been made in the skull. The tumor was not very large and its attachments were not firm.

The conclusions to be drawn from these cases, and I think from the majority of the cases reported during the last half-dozen years, are, it seems to me, first, that tumors of the cerebellum can be localized with a reasonable exactness, and, second, that operation, offering as it does the sole chance for relief, should be oftener resorted to.

INFLUENCES MODIFYING THE OCCURRENCE OF CERTAIN NERVOUS AFFECTIONS IN THE UNITED STATES.[1]

By GUY HINSDALE, M.D.,

Lecturer on Climatology in the University of Pennyslvania.

IT is a prevalent opinion that nervous diseases have been during recent years much more prevalent in the United States than formerly. The increasing physical and mental strain incident to the conditions of modern life is a well-recognized factor in the production of these diseases, and many think that our climate has much to do in developing an intense and over-eager activity, and that it renders work somewhat more trying than in other countries.

Just how far this is true it is difficult to state accurately, and it is not always possible to secure the necessary data, or, when they are presented in the form of statistics and emanating from official sources, they must be accepted, if at all, with great caution. In a long series of years the changes which occur in the nomenclature of vital statistics are very great, not to speak of the looseness which prevails even in our older states in recording the fact of death and its cause. In the recent census no effort has been made to give for all the states the number of deaths from individual forms of disease, but in those states and cities in which there has been a satisfactory registration this has been done. Unfortunately in Pennsylvania, with the exception of a few large cities, the system of registration of vital statistics is so imperfect, and in many counties so absolutely ignored that studies of the comparative prevalence of disease in various portions of the State are not possible. It is high time that Pennsylvania be put on an equality with other States in this regard.

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[1] Read at Philadelphia Neurological Society, February 22, 1892.

If we accept government statistics we will not find any very alarming increase in the number of deaths from nervous disorders. The census reports are as follows:

1850, 23,668	deaths	from	nervous	disease,	or 1	death	to 980	living	persons
1860, 40,216	"	"	"	"	" 1	"	to 782	"	"
1870, 60,455	"	"	"	"	" 1	"	to 638	"	"
1880, 81,905	"	"	"	"	" 1	"	to 512	"	"

It was at one time frequently stated that there was an apparent increase of nervous disease in certain cities of the United States of which Chicago is a type. But whatever differences may be apparent this discrepancy may be explained by the variables which must be taken into account in any statistical investigation. For example in the newer cities as a system of registration of all vital statistics is perfected the results are more and more comparable with those reported from older cities. It should be borne in mind in making such comparisons that the population of western cities, and especially the newer ones, is made up of quite different elements from those composing a city founded over two hundred years ago. In new cities there are relatively far more adults and fewer children than in New York or Philadelphia. As time passes, however, these differences undergo correction.

If we compare the prevalence of such a disease as apoplexy in the East with its prevalence in the West we find that there is more than twice as much apoplexy in New York as in Chicago; for in 1880, in 10,000 of population, 2.08 died of that disease in Chicago, while 4.93 died in New York.

It is quite possible that various causes have combined to produce some increase in nervous diseases in recent years, but proof is lacking to show that they have increased to anything like the extent frequently asserted. The accumulation of wealth in cities is often attended by great mental excitement, and renders possible excesses of food and drink which readily account for the slight excess of deaths from apoplexy in towns as compared with rural districts. To afford an explanation of the low rate from this disease in Chicago we must remember that, in general, the active men of that city are still young men, or in middle life, and that the older men have not led lives of ease and self-indulgence.

It is also commonly believed that insanity is on the increase. Fortunately we are able to show that, on the contrary, in Pennsylvania at least, there has been an actual decrease in insanity during the last ten years. Previous to this period we cannot speak with accuracy, for it is only within recent years that the State has asserted herself in seeking out these unfortunates, compelling their proper care and providing accommodations at public expense for this large class. Many such persons were kept at home and the nature of their disease suppressed as far as possible.

In 1880 there was one insane to every 615 persons
" 1890 " " " " " " 620 "

The actual decrease amounts to one four-hundredth of one *per cent.* This shows that the mental state of the citizens of this commonwealth at least is not deteriorating. The accuracy of the diagnosis of insanity is not modified by changes of nomenclature, differences of opinion, and other causes of error that obtain in the diagnosis, and consequently in the record of other disorders of the nervous system.

Upon comparing Pennsylvania, a typical eastern state, with a western state like Minnesota inferences with reference to these matters may be seriously misleading. The very large Scandinavian element in the population of this State enters into the question. Unrestricted immigration has brought into certain northwestern states vast numbers of Scandinavians not all of whom, by any means, are the hardy, intelligent, self-supporting people that we are accustomed to meet with from Sweden and Norway.

I am informed[1] that the Scandinavian race, as observed in this country, are especially susceptible to home-sickness; that a large number of them find that the demands for the necessaries of existence, the activity and competition characteristic of social and industrial life in America are more than their limited capacity can cope with; and that the degenerative class in the population of the State of Minnesota for example, is steadily increased from this source. Thus there has been a relative increase of insane population in that section of the country out of proportion to the increase of general population.

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[1] Through the courtesy of Dr. H. A. Tomlinson, of the Minnesota State Hospital for the Insane, St. Peter, and H. H. Hart, Esq., Secretary of the Minnesota State Board of Corrections and Charities.

To show how serious a matter has been this influx of a weak-minded population in Minnesota, it is only necessary to state that while the Scandinavians form about 16.5 per cent. of the population of the State they contribute 28 per cent. of the inmates of the insane asylums.[1] The somewhat greater proportion of adults in the immigrant population no doubt slightly raises their proportion of insane, but the increment of asylum population from this source is steadily increasing throughout Minnesota.

It may therefore be well understood that any increase of insanity which has been observed is not so much due to causes operating upon the native population, but from the "influx of defective immigrants who break down mentally after coming to this State.[2]"

But whatever may be the course of nervous diseases in this country the cause will be readily found in the excesses or errors committed through recklessness or ignorance of the laws of health. It is not necessary to mention the long category of such causes of disease. At any rate the American climate, if we may use such a term, shares but little of the responsibility.

The points which I wish to make are: (1) that nervous diseases are probably not increasing at least to any very alarming extent; (2) that insanity in Pennsylvania, for example, shows a very slight decrease in frequency; (3) that statistics regarding the less-firmly established states are liable to variables which make conclusions unsafe; (4) that whatever increase of nervous disease may be observed will be found to have other causes beside those of a climatic nature; (5) that we must recognize that the various elements of climate such as altitude, barometric changes and variations of temperature produce physiological effects; (6) that in choosing a locality to promote health, especially in the case of nervous disease, too much stress must not be placed merely on meteorological conditions. The manner of life and effect upon the mind must be strictly regarded, and more may be expected from these agencies than from what are generally understood as factors of climate in and of themselves.

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[1] Third Annual Report State Board of Charities and Corrections, Minnesota, 1889, p. 123.

[2] The influence of an altered diet in causing insanity is shown in the case of "a young man who had been accustomed in Norway to eat large quantities of coarse food, such as cabbage, turnips, etc., with very little meat. Upon coming to this country and being introduced to a farmer's table he ate great quantities of meat, rich gravies, pastry, etc., resulting in a complete derangement of his digestive apparatus and finally ended in insanity."—Private Communication from H. H. Hart, Esq., St. Paul.

To illustrate the latter statement I wish to add my observation of two cases, one a well-known physician, and the second a theologian.

CASE I.—"I went to Colorado in February, 1880, returning to Philadelphia, February, 1881. I was driven away from my work by sleeplessness, which kept me from fixing my mind for any length of time on scientific matters in the daytime. I roughed it from the moment I arrived there, lived on a ranch, herded cattle, hunted antelopes, traded horses, trapped and cooked for a "round up," in short, lived the roughest kind of a life. I think it was the peculiar life there, rather than the peculiar climate, which resulted in rapidly restoring me to health. The air, however, is very bracing and the climate thoroughly pleasant. And, although the temperature in winter sometimes varies greatly, one feels it less than in the East on account of the extreme dryness of the atmosphere. I think the most satisfactory life in the State of Colorado is on a cattle-ranch on the plains. Sheep-ranche life is miserable, so is a life in the mines in the winter."

CASE II.—A clergyman sends me this testimony: "You have asked me to tell you why I did well in Colorado. I had been working under a strain in my parish work, and I felt the need of a release. The great change from parish work to the life of a ranche was a great help. I am unable to say whether or not the climate, as such, was favorable to a depressed nervous condition. Certainly the bright sunshine, dry air, and exhilarating influences of the rare air all induced to an out-of-door life, basking in the sun, riding on horse-back, etc. The *life* helped me."

Results such as these are clearly attributed to a factor of climate which may be termed configuration of ground and nature of soil and its products, which renders possible such a life as has been described.

It must be borne in mind, however, that it is the requirements of the individual that must be considered. Physical actors of climate must be given their proper place in making a choice, but individuality takes precedence. The emperament of the patient, his previous habits, tastes, and mode of life, and degree of physical activity are of prime mportance. The mind must be studied, for no matter how nicely we may adjust the elevation, temperature, sun and wind to the requirements of heart or lung, nothing will avail f the patient's mind, his psychologic needs, are disregarded.

POLYURIA AND SCIATICA.

At a recent meeting of the Medical Society of the Paris Hospitals, Drs. Debove and Rémond announced certain phenomena which they had observed in their cases of sciatica. n the first case they found that polyuria was present, the amount of urine passed daily, varying from 2 to 4.25 litres.

Inquiry elicited the fact that the same thing had occurred hree years before when the patient had suffered from an attack of sciatica.

This led to further investigation and three other sciatic patients were found in whom a like condition was present. n one of these cases azoturia was found in addition to the polyuria.

Dr. Mathieu, having heard of these facts from his confrères, was led to make investigations on his own account and he also found polyuria present in two patients suffering from sciatica.

Dr. Desnos thought that he had found this condition present in other painful affections, as for example in hepatic colic.

W. F. R.

ALCOHOLIC PARALYSIS FROM MULTIPLE NEURITIS IN A CHILD SEVEN YEARS OF AGE.

BY WM. M. LESZYNSKY, M.D.,

New York.

MULTIPLE neuritis in childhood as a result of alcohol has rarely, if at all, been observed. The history in the following case, therefore, is not only worthy of record from an ætiological standpoint, but also on account of the extreme youth of the patient.

Eugene D., 7 years of age, born in the United States, normally and at full term. He was a large child and was nourished at the breast. His teeth appeared when he was 8 months old. He began to talk at the tenth month, and walked at the end of the first year. Always seemed bright and intelligent, and was in good health until his fifth year, when he was ill with chills and fever, from which he soon recovered. No vomiting; no convulsions. Five months ago he complained of pains in the forearms and legs, which were always worse at night and accompanied by numbness in the feet. These symptoms continued over a period of three months. Now only occasionally complains of pains and numbness. Both lower extremities became paralyzed four weeks ago. He has been unable to stand since that time. There is frequent sweating at night, but no cough. He complains of frontal headache, dyspnœa, and præcordial pain. There is loss of appetite and his sleep is very restless. Never wets the bed. He has been dull and listless for some time. *As the child was rather feeble during the last two years, the mother (who is an untutored and ignorant woman) has been giving him two bottles of beer daily, and some whiskey occasionally during the day, in order to "put some life into him," as she expresses it.* The brother of the patient died of phthisis in his twentieth year. Family history otherwise negative.

Status præsens.—Anæmic, emaciated, and rachitic child. Tongue slightly tremulous. No lead line on gums. Pupils and ocular fundi normal. Pulse, 120 and feeble. Respiratory sounds feeble over entire chest. Presystolic bruit at apex. Rectal temperature 100$\frac{4}{5}$° F. There is bilateral wrist-drop, but the extensors are not completely paralyzed. The function of the supinators is still preserved. Almost complete anæsthesia in the course of the radial distribution. The temperature sense could not be tested satisfactorily. The extensors in forearms and also the interossei are partially atrophied. There is typical electrical reaction of degeneration upon both sides, affecting the musculo-spiral nerve and the muscles depending upon it, including the triceps and the supinator longus. The interossei do not react to faradism. Other nerves and muscles in the upper extremities react normally. The patient is unable to stand or walk, and is, therefore, carried to the clinic. Both feet have "dropped" and remain in the condition of talipes equinus. The tibialis anticus, the extensor longus digitorum, and the other flexors of the foot and extensors of the toes are paralyzed and atrophied on both sides. Reaction of degeneration is present. Incomplete anæsthesia to touch and pain over anterior surface of leg and foot. Plantar reflexes absent. Both knee-jerks active. Urine: specific gravity, 1.020; acid; trace of albumen and a few granular casts; no trace of lead (three examinations were made). Patient was under observation four weeks, when all trace of his whereabouts was lost. Upon further inquiry, some months later, it was learned that the child died within a few weeks after his last visit to the clinic.

In many particulars this case bears a striking resemblance to cases of multiple neuritis from chronic lead poisoning. Diligent and persistent inquiries were made in regard to the probability of such an ætiological factor, but all interrogation proved fruitless. Without the knowledge of the excessive use of alcohol, I should certainly have been inclined to relegate this case to the class of toxic neuritides from lead, the method of the introduction into the system of the poison being unknown.

EPILEPTIC MANIFESTATIONS RESEMBLING WRITER'S CRAMP.

Dr. Féré (Gaz. des Hôpitaux) speaks of a patient in whom the epileptic aura took the form of a cramp similar to that seen in writers.

The manifestations become general so that the attack soon resembles one of ordinary epilepsy.

As soon as the attack is passed he is able to write again, which renders the differential diagnosis easy, since this would not be the case in true writer's cramp. The bromides when given produced marked improvement.

W. F. R.

A CASE OF HEMIPLEGIA OF RIGHT SIDE AND HEMIOPIA OF LEFT, CAUSED BY PENETRATING WOUND OF BRAIN.[1]

BY CHARLES S. POTTS, M.D.

THE interest which attaches to the case which I will show you does not depend so much upon the symptoms exhibited as upon the unusual manner in which they were acquired. The history is as follows:

A. S., æt. thirty, and a native of England, was until July, 1889, in good health. At that time he was pitching hay on to a wagon which at the time was nearly loaded. While elevating a fork-full of hay, and with face upturned, the boy upon the load let drop his fork, one prong of which entered the left orbit to the outer side of the eye. He became immediately unconscious, and Dr. Reeves, of Medford, N. J., who saw him immediately after, gives me the following account of his condition at that time: He says the prong of the fork had penetrated the brain at least two inches, and as the man fell, the fork, still in the brain, made a sidelong swing of at least 90°; he was unconscious and paralysis of the right side was noted, the condition of unconsciousness lasted several days; upon regaining consciousness he was only able to converse in the Yorkshire dialect, which he had not used for about fifteen years previous; this condition lasted for three months, after which the power of expression in ordinary English returned, although he still has to use the Yorkshire dialect to a slight extent. There never was any loss of the power of understanding what was said to him in English, and he could read. The temperature did not rise at any time above 101° Fahr., and after ten days became normal. Since the accident he has regained considerable power and his condition at present is as follows: Hemiplegia of the right side, muscles slightly wasted, with some tendency to contractures, but can walk fairly well, some use of arm, slight paresis of right side of face, no sensory paralysis, knee-jerk increased upon the right side. The examination of his eyes by Dr. Wallace showed the following conditions: In the right eye vision is $^6/_7$, and the eye ground and field are normal. In the left eye, vision, $\frac{6}{150}$, nerve completely atrophic, and has a filled-in appearance, color greenish-gray, sharply cuts dual ring; around the nerve is an uncompleted ring, very narrow and shining white in color. There is a scar near the outer canthus, with a point of black discoloration in the conjunctiva. The field of vision is contracted upon the temporal side, and the superior half is blind.

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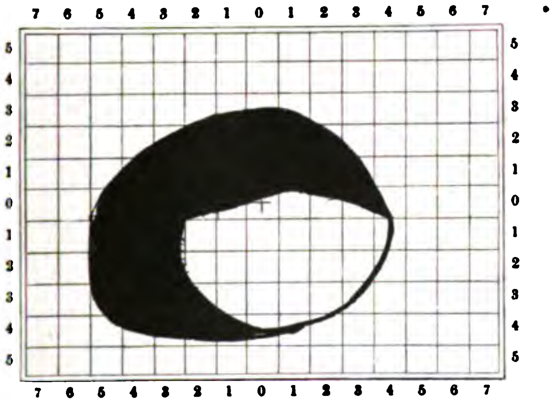
[1] Read before the Philadelphia Neurological Society, February 22d, 1892.

There is no difficulty with hearing. There is no history of syphilis, and 5 grs. of potas. iodid. three times daily cause iodism.

These symptoms I think were caused in this way: the prong of the fork entered the orbit and then divided the lower and some of the inner fibres of the optic nerve posterior to the entrance of the central artery of the retina, then probably passed upwards, punctured the roof of the orbit and entering the brain injured the corpus striatum and probably some of the motor fibres of the internal capsule, or possibly caused a hæmorrhage there. The aphiasic condition was probably due to the shock sustained by the brain. Another interesting point in this case is that no brain abscess resulted, also that no other structures were injured. For the opportunity of showing this case I am indebted to Dr. H. M. Fussel.



THE FREQUENCY OF LOCOMOTOR ATAXIA IN NEGROES.[1]

By C. W. BURR, M.D.

WE are probably more advantageously situated in America for the study of the influence of race on disease than are the students of any other country, for we have among us large numbers of foreigners living more or less their own lives while all are under identical climatic conditions. On the other hand, in studying race influences in people still in their native lands, it is impossible to tell how many of the peculiarities of the manifestations of disease are due to race itself and how many to climate in its broadest sense.

With a view to throwing some light on the question of the frequency of locomotor ataxia among negroes, I have collected the following statistics, or as it would be better to say, opinions from physicians in Cuba, the Southern States and our own city. I am well aware that this method has many disadvantages, unless one can get the opinions of a vastly greater number of men than I have been able to do. I am also well aware of the carelessness of negroes toward chronic diseases, but still I feel that the data are sufficient to permit a tentative conclusion to be drawn.

Dr. Juan Santos Fernandez, of Havana, was so kind as to prepare and send out for me circulars to the physicians of Cuba. Six of the thirty-eight who replied have seen eight cases in full-blooded negroes, and one has seen several in mulattoes. These physicians are scattered throughout the whole extent of the island, many of them have had large experience on plantations ; the aggregate duration of the practice of twenty-six is three hundred and forty-one years. One who in twenty-seven years has had twenty plantations under his care has never seen a case, and another who for seven years has had under his charge fourteen has seen but one.

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[1] Read before the Philadelphia Neurological Society, February 22, 1892.

Dr. W. H. Huger, of Charleston, S. C., writes: "My own impression is that negroes are exempt. I have never seen a case." At a meeting of the City Medical Society, and also at the spring meeting of the State Society, no member had seen a case.

Dr. J. W. Byers, of Charlotte, N. C., writes that he has never seen a case, and from his study of the race and its peculiar diseases he is inclined to believe that it is an exceedingly rare disease.

Dr. Middleton Michel, of Charleston, S. C., writes: "Having previously given some attention to this very subject, I am able to declare it to be comparatively rare so far as statistics have helped me to decide the question. Of course we meet cases of unmistakable ataxia in the negro, but not nearly as frequently as among the whites."

Dr. Osler, of Johns Hopkins University, Baltimore, writes that out of twenty cases which have been under observation since the opening of the hospital, one was a full-blooded negro and one a mulatto.

Dr. W. C. Dahey, of the University of Virginia, writes that in twenty-three years he has never seen a well-marked case, while he has seen many in white people. He has, however, seen a few cases which presented some of the symptoms of the disease.

Dr. R. A. Kinlock, of Charleston, S. C., does not remember ever to have seen a case.

Dr. Thomas F. Wood, of Wilmington, N. C., sent notes of a case occurring in a man whose father was white and whose mother was a pure African.

Dr. G. T. Vaughan, of Indiana, writes that, "in a practice of ten years, during which I have always had more or fewer negro patients, I do not recall a single well-defined case."

Dr. Irving C. Rosse, of Washington, D. C., writes: "While I am not in possession of enough facts relatively thereto to warrant the formulation of any general conclusion, I can personally testify to the frequency of tabetic troubles in that race (the negro)." In his letter he mentions four cases which he has seen in the last few years.

During the last fourteen years no case has applied at the Infirmary for Nervous Diseases in Philadelphia. It must be said, however, that very few negroes come to that institution. Dr. Potts, of the Nervous Dispensary of the University of Pennsylvania, tells me that no case has applied there during the last eight years. Dr. D. S. Stewart, of the Nervous Dispensary of the Jefferson Medical College Hospital, has never seen a case during his service of more than six years. Other physicians to whom I have spoken, while their opinions varied on theoretic grounds, have been unable to recall cases. I have omitted to cite hospital reports because they are notoriously false, and because those which I received made no distinction between pure-blooded negroes and mullatoes. This distinction is of some importance, for I do not believe that we are justified in saying that the offspring of a pure negro and pure Caucasian receives an equal inheritance from each, equally shared by all organs. I can easily conceive of such an one with a Caucasian brain and African liver, or *vice versa*.

For my own part I have never seen a case in a pure black, and but one in a mullato. His history is as follows:

J. S., male; mulatto; single; no occupation; came to Dr. J. P. Crozer Griffith's clinic at the Howard Hospital, April 14, 1890.

Family History.—Negative.

Personal History.—Chancre four years ago. Never inflammatory rheumatism. Two years ago chills on alternate days for one week. One year ago vision began to fail and he began to stagger in walking. Some rheumatic pains in legs.

Present State.—Gait very ataxic. Station with eyes open bad, and with eyes shut he cannot stand at all. Difficulty in touching ear and nose with eyes shut and in picking up small objects. Knee-jerk absent and not reinforcible. E. j. absent. Cremasteric reflex absent. Abdominal reflexes present. Muscle-jerks present only in the pectorals. Sensation to touch and pain slightly impaired, to temperature normal. Tells the position of legs well when eyes are shut. No painful nerve points. No wasting. No fibrillary twitching. No palsy. Sexual sense said to be good. Bowels constipated.

Dr. Castle kindly examined his eyes and reports: "Argyll Robertson pupil. Eyes protrude somewhat. Optic atrophy most marked in left eye, with which he can only tell light from darkness. Arcus senilis."

Heart.—Very inconstant murmur at apex. Some accentuation of pulmonary second sound.

Lungs.—Decided dulness in lower left axillary region with a few crackling râles on inspiration. No spinal deformity.

At no time has he had gastric or other crisis ; the lancinating pains have never been severe. His condition has steadily grown worse. He was treated for some months without any improvement.

In conclusion, I think we may say that while the data given are not sufficient to permit one to say dogmatically that locomotor ataxia is a rare disease among negroes, still it is sufficient to permit one to hold such an opinion tentatively until further investigation disproves it.

CEREBRAL HÆMORRHAGE FROM INFLUENZA.

Virchow presented to the Medical Society of Berlin the brain of a young man of twenty years, who succumbed to the grippe. The principal lesion was a hæmorrhage situated in the cerebral cortex of the left hemisphere, near the vertex. The hæmorrhagic focus was of the size of a small apple, and surrounded with a narrow zone of punctiform hæmorrhages, accompanied with œdema. In the vicinity of this hæmorrhage were two small abscesses where the pia presented fibrino-purulent infiltration. The same individual was attacked by hæmorrhagic nephritis with multiple foci. There was found, besides, a small abscess of the liver. A common point of departure could not be found to explain these lesions as embolic. He suffered from a slight mitral insufficiency. The lungs contained several broncho-pneumonic foci in the red stage of hepatization, with hyperæmia and œdema. (Le Bulletin Medical, No. 88, 1891.) F. H. P.

ANTIPYRINE FOR THE RELIEF OF HEADACHES.

By GRÆME M. HAMMOND, M.D.,

New York.

SINCE antipyrine was first brought prominently before the medical profession several years ago, ample time has been afforded in which the claims made for this remedy can be investigated and either substantiated or disproved.

As an antipyretic the drug is certainly effective, and as an analgesic and hypnotic it is valuable to a certain extent. The varied affections for which antipyrine can be employed with efficacy are so numerous that the subject would be too voluminous for a single article. I therefore propose to confine what I have to say to the effects of antipyrine on certain forms of headache.

In migraine, antipyrine may or may not be a suitable remedy. It is well known that attacks of migraine, in some instances, are characterized by pallor and coldness of the skin on the affected side, while in others, flushing of the face, increased temperature of the skin, and dilatation of the temporal artery are prominent symptoms. Whether this condition of vaso-motor spasm on the one hand, and vaso-motor paralysis on the other, are the causes or only concomitant symptoms of the affection has not yet been definitely determined, but it seems to me that those remedies are most effective which counteract the existing abnormal vaso-motor condition. Thus, in migraine accompanied by vaso-motor spasm, such remedies as glonoin, amyl, alcohol, or quinine, frequently relieve the pain and abort or arrest the attack within a very brief period of time. One of the actions of all of these medicines is to dilate the cerebral blood vessels. Again, such remedies as the bromides or other drugs which contract the cerebral blood-vessels in a similar manner are either ineffective in relieving the pain or else decidedly aggravate it. Antipyrine, in my opinion, in addition to its other properties, has the power of diminishing the intra-cranial circulation. Perhaps it is to this effect that its hypnotic action is due.

At all events, I have seen many cases of migraine, in which angio-spasm was well marked, either entirely uninfluenced by antipyrine or else made very much worse by it. It seems to me that this effect is probably induced by intensifying the cerebral anæmia which probably exists simultaneously with the anæmic condition of the skin of the face on the affected side.

Quite different, however, is the action of antipyrine on cases of migraine accompanied by vaso-motor dilatation. Previous to the advent of antipyrine we possessed no remedy which could relieve the pain of this form of headache with any degree of celerity, except opium in some one of its many forms. But if antipyrine seems to be contra-indicated in the angio-spastic form of migraine, it certainly appears to exert a most beneficial influence on the angio-paralytic variety. It should be given as soon after the onset of the attack as possible, and the patient should be instructed to keep as quiet as he can. There is little to fear from any depressing cardiac effect from the use of antipyrine in this affection. The action of the heart is usually accelerated and somewhat exaggerated, and therefore a remedy which has a slightly depressing effect is not to be deprecated. If the pain has increased steadily until it becomes very intense before antipyrine is administered, it is very apt to prove either inoperative or else very nearly so. The analgesic property of antipyrine is limited because the quantity given at any one time must be limited. With morphine, the effect of which is mainly analgesic and is only hypnotic after the analgesic effect is secured, it is, in most cases, quite proper to administer it in sufficient quantities to relieve pain no matter how intense the pain may be. But with antipyrine the case is different. The quantity which may properly be given at one time must necessarily be limited, and consequently the analgesic effects must be limited as well. Hence it is always best to give antipyrine as soon after the onset of the attack as possible.

It will then be found to be a reliable, effective and perfectly safe remedy, and will give relief in many cases where formerly morphine was employed. Its advantages over morphine for the relief of moderate pain in that it produces no stomachic disturbances, derangements of digestion, or leads to the danger of forming a morbid habit, or constipation, while it is equally effective in relieving pain, leaves little doubt in our minds that morphine should never be used in such cases if antipyrine can be obtained.

In sick headache, properly so-called, in which the headache seems to be reflexly due to the irritation of the digestive tract from the inordinate use of food, alcoholic stimulants, or to both combined ; or from the direct effect upon the brain of blood charged with deleterious substances, such as, for instance, uric acid, which results sometimes from indiscretion in diet, antipyrine is very effective. This is well known to many habitual "diners out" whose much-abused digestive organs refuse to submit to further outrage without vigorous protest, and to those who frequently drink alcoholic beverages to excess. It is not infrequent to find such as these carrying antipyrine powders in their pocket-books so as to have relief close at hand when they require it. The popular knowledge of the efficacy of antipyrine to relieve this form of headache is to be deplored, because with the drug in his possession the individual who formerly was somewhat restrained by the fear of the consequences of a debauch believes he can now indulge in excess with impunity, and, because on account of the relief experienced, without any deleterious effect being perceived the layman believes he can prescribe the drug for himself whenever he pleases and for all forms of headache and neuralgic pains without jeopardizing his health in the least.

By the time sick headache makes its appearance, after indiscretion or excess of diet, the system is usually below par, and the heart after a period of stimulation and forced work is somewhat fatigued. It is better, therefore, before administering antipyrine for the relief of sick headache to examine the condition of the heart, and if it is at all irregular, or inclined to be sluggish, to combine the antipyrine with digitalis or with some other cardiac stimulant, except alcohol. Observing this precaution, antipyrine will be found to be an excellent remedy for typical sick headaches.

In the various forms of neuralgia, either of malarial origin or from other causes, antipyrine is a very serviceable and effective drug. There is no reason to believe that antipyrine has any curative effect such as quinine has and it s therefore useless to give it between the paroxysms of pain, but in arresting the paroxysm itself the rapidity of its action and the thorough relief it affords are often quite remarkable.

Antipyrine undoubtedly owes its analgesic properties to ts effects on the sensory cells of the central nervous system, diminishing their irritability without completely abolishing t. Its use, therefore, is to control pain without affecting the morbid condition which gives rise to the pain. Using t for this purpose only and using it with care and discretion t will be found to be one of the most useful drugs in our possession.

EPILEPTIFORM ATTACKS FROM TÆNIA.

Martha has gathered twenty-two observations where epileptiform attacks could undoubtedly be traced to the presence of tænia. According to him the attacks are not much different from those of classic epilepsy. Expulsion of the parasite causes a cessation of the spasms; yet the attack has not the characteristic brusqueness of true epilepsy. The patient finds time to throw himself upon a bed, or to call for help, while grave injuries and falls are exceptional. The initial cry, biting of the tongue, and frothing of the mouth are inconstant signs and of no great diagnostic mportance. The convulsive and comatose periods are of longer duration than in true epilepsy; the attacks have a tendency to become periodic. The male sex is more frequently attacked than the female. Nervous hereditary or personal antecedents have no important influence. Unilateral movements are not regularly observed as in true epilepsy. (Arch. Général de Méd., Nov. and Dec., 1891.)

F. H. P.

Neurological Digest.

CURRENT ANATOMY, PHYSIOLOGY AND PATHOLOGICAL ANATOMY OF THE NERVOUS SYSTEM.

By JOSEPH COLLINS, M.D.

HYSTERICAL FEVER.

The multiform manifestations of hysteria is one of its most salient characteristics. Many of its prominent symptoms, such as the polyuria after the attack, the muscular twitchings, the vaso-motor phenomena, etc., are readily explainable, but it is not so with the hyperpyrexia which attends some cases of simple as well as profound hysteria and hystero-epilepsy; here an explanation must be largely problematical so long as our knowledge of the pathology of hysteria is so unsettled as it is to-day. Among the recent writers who have treated the subject of hysterical fever clinically and theoretically must be mentioned Dr. Arthur Sarbo, who has gone into it at some length, and has published his ideas in the XXIIId volume of the "Archiv. für Psychiatrie." In this paper we are given the theories of many workers from the time when the French authors, such as Pomme, Tissot, and others first spoke of this condition and its supposed origin, and to Briquet's classification as presenting itself under three forms: (1) symptoms of fever, of which the rapid pulse was the characteristic; (2) rapid pulse and subjective feelings of warmth, and (3) a condition where with ordinary symptoms there was added headache, great thirst, anorexia, vomiting, etc. It was the opinion of Briquet probably as also was it of Laudouzy that the febrile symptoms were the result of the muscular cramps, while Chomel, on the other hand, considered the fever dyspeptic in origin. But it is hardly necessary to go into the classification or various ideas that were put forth for the purpose of explanation by the older French writers. It suffices to know that such a condition as hysterical fever exists and is frequently observed, and then to draw such conclusions as are possible in concordance with our present knowledge of neuritic physiology. In the paper referred to by Sarbo his argument for the occurrence of the fever is summed up in the three following paragraphs:

1. Clinical observation has for long instructed us that in the causation of fever the nervous system plays an important rôle, and experimental investigation has shown that this influence of the nervous system is controlled by two centres, the vaso-motor and the thermic centres.

2. Any fever for which no organic disturbance can be found, which implies that the influence producing it has acted through the nervous system, we consider to be the result of a disturbance of the function of the thermogenic centre and call such a result functional nervous fever.

3. It is *a priori* probable that in hysteria which is an exquisite functional neurosis such a condition of fever can present itself.

In order first to understand the production of neurotic fevers we must thoroughly understand the production of fever in pathological conditions. One of the prime conditions necessary for any organ to functionate physiologically is a proper degree of temperature. The production of heat is the result of oxidation of certain substances in the blood and tissues rich in carbon and poor in oxygen. As this process goes on with greater or lesser vigor so will be the production of animal heat, and any condition which stimulates this oxidation, whether it be taking an excess of food rich in carbon or *vice versa*, excess of oxygen, providing always that the opposite element be present in sufficient quantity to satisfy the other element in excess, will result in the production of an extra amount of heat which may really be termed physiological. But when a condition of rise of temperature results from excessive oxidation of the components of the blood and other tissues which are ordinarily concerned in satisfying the proper equilibrium of the body, this state must be termed pathological. The most potent argument in favor of excessive oxidation is to be found in the fact that the exhalations and excretions indicative of oxidations are found to be greatly increased, such for instance as the carbon dioxide and the urea. The stimulus in causing such an increased oxidation can be divided into the organic irritants embracing our now well-formulated germ theory, and the inorganic, such as the mechanical, chemical, electrical, etc., and to satisfy the condition which we are now describing a third condition or psychical must be mentioned. In considering how these irritants act to produce excessive oxidation it was but natural that investigators should both from analogy and theory suspect the presence of a thermogenic centre, whose equilibrium having been disturbed by the pyrogenic substance, a febrile state would follow. Such a centre has been described by various investigators. H. Fischer located it in the cervical segment of the cord; Ripping found in the posterior part of the gyrus fornicatus such a centre. Tscheschichin observed an elevation of temperature when the pons was severed from the medulla, and he was of the opinion that the cerebrum was possessed of modifying heat centres. Baginsky and Lehman observed high temperature following irritation of the corpus striatum. H. C. Wood, in a brochure on "Fever," published in 1880, reaches the conclusion that there is a special heat centre either in or above the pons, probably in the first cerebral convolution posterior to the sulcus cruciatus and this centre he regards as inhibitory in its action, in so much as irritation of it resulted in a diminution of heat production, and he also puts forth the theory that this centre is incited to activity by an elevation of the temperature of the body. Most observers are of the opinion however that the thermogenic centre is situated in proximity to the vaso-motor in the lower portion of the floor of the fourth ventricle, near the apex of the calamus scriptorius, and this is the view promulgated by most teachers of physiology to-day. That such a centre exists here very few will doubt, but it is probably also the opinion of recent observers who have been following in the wake of experimental physiology that such a centre is subsidiary, and greatly so to cerebral, not centres but areas. Dr. W. Hale White has recently made important contributions to this subject, as has also Dr I. Ott, some of whose experiments have been published in this JOURNAL. The former investigator has proven that lesions of the corpus striatum, septum lucidum, crus cerebri, and posterior part of the upper surface of the cerebral cortex cause a rise of temperature. This view of thermal areas need not at all conflict with the presence of a centre in the medulla whose function is to preside over the regulation of heat in its expenditure and income, and not only bears a very close anatomical relation to the vaso-motor centres but a physiological one.

What little is known about the pathology of hysteria can be no better given than is written by Gowers, where he says it not only consists in, but arises by a functional disturbance, a loss of due balance between certain of the higher functions of the brain. But many, probably most, of the definite groups of symptoms depend on the secondary derangements of the lower centres. Reasoning on an analogous plan we might conceive of higher heat areas, such as those described by White, Ott, Wood, and others, which on suffering some molecular change or a disturbance in the nutrition of the finer nerve elements might so react on this secondary control centre situated in the medulla as to cause an increased production of heat.

In our ordinary text-books the subject of fever in hysteria is dismissed with the statement that an elevation of temperature is rarely if ever present, but that the registering thermometer is such a conclusive instrument to excite the wonder and sympathy of physicians and friends, that it is often clandestinely manipulated in order to register some enormous degree of heat, but the fact still remains, on the authority of trustworthy and careful observers that an elevation of temperature does take place in some cases, not the incredible increases of 120 to 160° F. which are spasmodically reported to cause horipilation in the credulous, but a moderate elevation.

Dr. Sarbo first relates a specimen case of hysteria which represents the condition of so-called pseudo-hysterical fever of the French, or apparent hysterical fever of the Germans, or hysterical tachycardia, and considering these cases he draws the following conclusions:

1. Hysteria as a vaso-motor neurosis can present a symptom complex which if but tachycardia is added thereto will give the appearance of a hysterical condition; in which, nevertheless, no elevation of temperature is found, and this condition we may term pseudo-hysterical fever, but he cannot agree with Pinard in including those cases whose temperature reached 38° to 38.5° C., as Pinard considered this elevation within physiological bounds.

2. Hysterical tachycardia is a condition to be rather frequently observed.

3. This pseudo-hysterical fever occurs as well with simple hysteria as with hystero-epilepsy.

In his second group Sarbo places his cases of actual hysterical fever, and without going into the details of these cases it may be interesting to cite the following conclusions:

1. In the course of hysteria we may have a continued fever which has no organic disease for its foundation, and which is not at all dependent on muscular contraction, as in cramps, and to these cases and to these alone are we justified in giving the name continuous hysterical fever.

2. Continuous hysterical fever may be of the mildest form, or it may be very intense. In a schematic way we might divide continued hysterical fever into two groups. The first, including those cases of mild fever where the temperature reaches 38.5° C., and the second, those having

a temperature registering from 38.5° C. and upwards. The continuance of this fever is between days and months.

3. The fever need not be typhoid in character, often it comes on suddenly and disappears with equal abruptness.

4. Anomalies occur as in the difference in the temperature in the two halves of the body, then again there occurs a high morning temperature, and often a low evening temperature.

5. Often severe symptoms do not have a high elevation of temperature, and *vice versa;* a case with high elevation of temperature need not necessarily be accompanied by severe symptoms.

6. This fever may so engraft itself on a symptom complex as to present a picture of typhoid, tubercular meningitis, phthisis, or peritonitis.

7. As an apparent cause of the fever there may be in one case the sudden appearance of the menstrual flow, psychical shock, traumatism, etc., but in most cases there is no attributable cause.

8. In a single case there followed after an attack of hysteria, independent of the hysteria, a stage of fever, but the appearance of this cannot be taken as a differential diagnostic mark between epilepsy and hystero-epilepsy.

9. This form of hysterical fever has as yet been most often observed in cases of hystero-epilepsy.

Concerning the ætiology of hysterical fever Dr. Sarbo does not agree in all particulars with Chauveau, who was the first to consider the ætiology of this symptom. His opinion was that it might occur primarily without any conceivable referable causes, or secondary, as a reaction of the nervous system from slight organic change. But Sarbo considers that all cases with fever dependent on organic change, be they ever so small and insignificant, should be excluded from being classified as hysterical, as he considers as the one great characteristic of hysterical fever, that it arises not from organic change, even the slightest nutritional disturbance, but from disturbance of functional equilibrium. With this view of Sarbo's it does not seem possible to entirely accord.

It is probably the conception of pathologists that all now so-called functional diseases will some day, under the searching influence of superior methods of investigation and observation, be shown to have a really determinable and demonstrable lesion, and if this prophecy be fulfilled the elevation of temperature will be shown to depend on the nutrition or molecular changes, or both, which we conceive of now on theoretical grounds.

The relation borne to the development of hysterical fever by trauma, menstruation, psychical influence, etc., are of very little importance, except in their influence in starting the manifestation of the functional neurosis; they act merely by destroying the poise of higher nerve equilibrium, but their force would be inert if an inherent predisposition to be impact was not present.

Although Dr. Sarbo enters into the discussion of the diagnosis and prognosis of hysterical fever it does not seem laudable nor desirable to elevate a single symptom to the dignity of being treated as a disease. It is no more possible to make the diagnosis of hysterical fever by the consideration of that symptom alone than it is to make a diagnosis of hysterical urine from the consideration of the urine alone. Hysteria will continue as it has always done, to simulate a multitude of dissimilar diseases, and the presence of fever will but make its diagnosis somewhat more severe, especially when it has to be differential from febrile diseases. This diagnosis will probably be reached most safely and satisfactorily by considering the temperament and somatic conditions of the patient and by a process of exclusion. The same remarks might apply to the prognosis. It deserves no separate consideration. The prognosis of hysterical fever is simply overawed by the protean form of hysteria itself. Dr. Sarbo, in the conclusion of his really interesting paper, gives the three following general conclusions:

1. Such a condition as hysterical fever really exists, and it can be classified under two forms: a continued and interrupted form presenting itself abruptly.

2. Hysterical fever we must consider as a functional fever. We therefore consider the fever as a homologue of other hysterical manifestations.

3. This condition occurs as well in simple hysteria as in hystero-epilepsy, and with these conclusions there will probably be very little confliction, except perhaps in the first half of the second paragraph, as already some workers have disclaimed their belief in its being entirely functional, as that term is generally understood.

Periscope.

EXCERPTS WILL BE FURNISHED AS FOLLOWS:

From the Hollandish, Swedish, Danish, Norwegian, German, Portuguese, Roumanian, Spanish and Italian:
F. H. PRITCHARD, M.D., Norwalk, O.

From the Swedish, Danish, Norwegian and Finnish:
FREDERICK PETERSON, M.D., New York.

From the German:
WILLIAM M. LESZYNSKY, M.D., New York.
BELLE MACDONALD, M.D., New York

From the French:
L. FISKE BRYSON, M.D., New York.
G. M. HAMMOND, M.D., New York.

From the French, German and Italian:
JOHN WINTERS BRANNAN, M.D., New York.

From the Italian and Spanish:
WILLIAM C. KRAUSS, M.D., Buffalo, N. Y.

From the Italian and French:
E. P. HURD, M.D., Newburyport, Mass.

From the German, Italian, French and Russian:
ALBERT PICK, M.D., Boston, Mass.

From the English and American:
A. FREEMAN, M.D., New York.

From the French and German:
W. F. ROBINSON, M.D., Albany.

The Editor will not accept as ORIGINAL ARTICLES and CLINICAL CASES those that have appeared elsewhere.

Authors are requested to make none but typographical corrections on the proof sent to them. The manuscript must represent the final form in which the article is to be printed.

PHYSIOLOGICAL.

ON THE EFFECTS OF CHLOROFORM.

(British Medical Journal, November 21, 1891). L. E. Shaw, M.D., gives an account of some experiments made by Dr. Gaskell and himself which were in accordance with those of the Hydrabad Commission. They show that when chloroform is administered without interfering with perfectly regular respiration, complete insensibility can be produced without obvious weakening of the heart's beat. Inefficiency of the heart is brought about by the rapid inhalation of chloroform in too concentrated a form. The practical teachings are that it should be administered slowly, and with plenty of air, and that great care should be taken not to push the chloroform when struggling or gasping respiration occurs.

A. F.

PATHOLOGICAL.

EPILEPSY AND INFANTILE CONVULSIONS.

(Boston Med. and Surg. Jour, Nov. 5, '91.) Walton and Carter having made a study of the connection between epilepsy and infantile convulsions come to the conclusions, (1) that epilepsy may begin in infancy and become continuous, and (2) where infantile convulsions have ceased for a sufficient time to remove the case from the class mentioned under conclusion (3), the child is no more likely to become an epileptic than any other individual. A. F.

MULTIPLE NEURITIS.

At the meeting of the Society of Internal Medicine of Berlin, held November 2, 1891, Fränkel reported three interesting cases of multiple neuritis.

1. A man fifty years of age, an inebriate, presented concurrently with the ordinary symptoms of neuritis, a very marked amnesia.

He remarked that physical symptoms are very infrequent in multiple neuritis, and should always be referred to a lesion of the cerebrum. In cases of this kind the general condition of the patient is habitually bad; there is much prostration. This was so in the case in question; the patient grew more and more feeble and succumbed. At the autopsy a deliquescence of the myeline of the peripheral nerves was found; the spinal cord was intact.

2. The second case was that of a young lad aged fourteen years, of wretched appearance, who, besides paresis of the lower limbs, and ataxic gait, had complete paralysis of the left arm and atrophy of the paralyzed muscles; the case resembled one of progressive muscular atrophy.

3. A coachman of twenty-nine years presented himself with the symptoms of tuberculous neuritis very pronounced, there was also pulmonary tuberculosis. He had complete paralysis of the lower limbs, paresis of the upper limbs, hoarseness of voice from paralysis of the left vocal cord, and intense pains. Under a full nourishing diet and cod-liver oil he got better of the nervous symptoms, but his pulmonary disease went on from bad to worse.

The same speaker also reported a case which he regarded as a case of locomotor ataxy, but which his colleague

Remak diagnosticated as multiple neuritis; the diagnosis continued to be very obscure.

Goldscheider remarked that the participation of the cranial nerves in the lesions of multiple neuritis is very uncommon. In one of his patients he observed a lesion of the motor oculi, in another atachycardia, due to participation of the pneumogastric, and ulteriorly a left optic neuritis. This patient got well.

Remak referred to the case diagnosticated by Fränkel as tabes, but considered by himself as multiple neuritis (vide supra). The patient had since completely recovered. This result confirmed his diagnosis.

Leyden closed the discussion by saying that the clinical picture of multiple neuritis is accepted in science as he presented it twelve years ago.

In his first memoir he took stand against the dogmatic distinction established between the peripheral and central system as far as concerns their relations with multiple neuritis; the toxic agent may influence immediately both systems. According to his own observations, the anatomical lesions of the central system affect only the ganglionic cells; there may also be *focal* lesions of the gray substance, but he has not thus far met with lesions of the white substance.

It is difficult any longer to establish any clear separation between the nerves and the muscles, as the muscles may also be primarily affected with myositis.

The anatomical lesions of the nerves in cases of multiple neuritis present three varieties: 1. We may meet with a neuritis with abundant proliferation of cells and effusion into the nervous substance and into the sheath. 2. There may be a degeneration of the nerves with disappearance of the myeline; this is also an inflammatory form. 3. Lastly, according to his observations, acute ascending paralysis ought to be classed with multiple neuritis. He believes that the toxic agent first disturbs the functions; the material degenerations follow.

He does not know whether the neuritis may ever extend itself to the spinal cord. He does not know of any case in which a tabes or a myelitis has immediately followed a multiple neuritis. It is not impossible but that such cases may yet be witnessed.

The diagnosis may be difficult in alcoholic neuritis. It is probable that a great many cases of tabes reported as cured belong to the category of multiple neuritis. E. P. H.

CLINICAL.

PHOSPHORUS POISONING.

(British Medical Journal, December 19, 1891.) Elkins and Middlemass report the case of a lady, aged thirty-four, who suffered from mental depression, but was otherwise intelligent and coherent in conversation, and had a good memory. After sucking the phosphorus ends of two boxes of matches she died in about one hundred hours. Briefly, the mental symptoms were in order of appearance: listlessness; drowsiness; restlessness; mental confusion; inability to understand what was said; inability to answer questions readily or correctly; inability to recognize friends; semi-consciousness; semi-delirium; delirium; fits of great restlessness and violence; constant use of the word "yellow" when delirious; maniacal expression and behavior; coma. Sensory symptoms: Rheumatic pains; blindness.

Motor symptoms: Thick and drunkenlike speech; pupils fixed and dilated; external strabismus of left eye. The pathological interest of the case lies in the changes in the nerve-cells of the cortex. Sections of the cortex showed fatty particles in the walls of the larger capillaries and fatty granules in the larger nerve-cells, most pronounced in the fourth layer. The authors state that the power of phosphorus to cause fatty degeneration in nerve-cells has lately been denied, but that this case shows that the nervous system does not escape. The occurrence of fatty degeneration in so many tissues of the body, points to some fundamental alteration in the processes of metabolism which phosphorus has the power of bringing about, but what this really consists in we can as yet only conjecture. A. F.

INJURY OF THE CAUDA EQUINA AND CONUS MEDULLARIS.

In "New York Medical Journal," August 22, 1891, C. A. Herter, M.D., reports the case of a man injured by a heavy door falling on him. He regained consciousness in a few hours, and complained of pain and tenderness over the dorsal spines, which were somewhat prominent. There was loss of power in lower limbs; absence of knee, cremaster and plantar reflexes, and incontinence of urine and fæces. After a week slow recovery of power began in the legs. The sphincters, however, remained paralyzed, and early cystitis developed. Eighteen days later anæsthesia and analgesia were observed in legs, feet, and on either side the median furrow of the buttocks in a semi-elliptical area, and on either side of the pubes. There was continuous pain referred to the sacrum. The lower extremities were atrophied with loss of faradic contractility in the muscles below the knee, and diminished galvanic contractility with reversal of the polar formula. General improvement followed, and in three months he walked with canes, but still had loss of sensation on the buttocks, and paralysis of the sphincters. Atrophy of the legs became more marked, but the reflexes all returned. As no further improvement occurred, operation was decided on, and the cauda exposed, but no pathological condition found. He died forty-eight hours later. The autopsy was limited to an examination of a specimen of membranes and inclosed cauda. To the right of the conus medullaris, and partly covered by bundles of the cauda was a firm yellowish mass. The various bundles of the cauda were bound together by inflammatory matter. There were irregular thickenings of the dura and numerous adhesions. Part of the specimen showed hæmorrhages and great cellular infiltration in the dura. About the cauda the pia was thickened and infiltrated with small spherical cells. In the most central nerve-bundles the fibres were nearly all completely degenerated. The third and fourth nerve-roots were normal. A. F.

A CASE OF LABIO-GLOSSAL PHARYNGEAL PARALYSIS IN A CHILD TWELVE YEARS OF AGE.

M. Brück, (Pester med.-chir. Presse, 1891, No. 30. Budapest). A boy twelve years of age was in good health, save a nasal affection, after recovery from an attack of typhoid fever which lasted five weeks.

Soon after, it was noticed that there was difficulty in speech and stammering. While eating he had frequent attacks of choking, and was only able to swallow after prolonged efforts. These symptoms increased. Eight days later, the power of speech and swallowing was entirely lost. There was no hereditary history of nervous disease. The skin of the forehead was wrinkled transversely, in sharp contrast with the mask-like rigidity of the skin of the face. The bridge of the nose was sunken. The nasal mucous membrane was reddish-brown, and covered with a fœtid secretion. Thin saliva flowed from the half-open lips. The mouth could not be closed.

Movement of the muscles about the mouth was impossible. The tongue lies motionless on the floor of the buccal cavity. The mucous membrane of the soft palate, and the fauces is markedly atrophied. The velum palati is flaccid. The wound deviates somewhat to the right. The patient cannot speak, and swallowing is impossible. He lets the fluid nourishment flow mechanically into the pharynx by throwing his head backward. In other respects his condition is normal. Within a few days there was weakness in forearm and hand. This condition lasted but a short time. Then the paralytic symptoms improved, and in about four weeks from the beginning of the affection, the patient made a complete recovery. There had been no treatment.

Typhoid fever is to be looked upon as the cause of the disease, and on account of the rapid and complete recovery the paralysis must be considered as functional. (Centralblatt f. klin. Med., No. 48, 1891.) W. M. L.

CASE OF TUMOR OF THE PONS.

Dr. P. Watson Williams (Bristol Medico-Chirurgical Journal, Sept., '91.) A boy, aged six years, slightly hydrocephalic had for a time been observed to be growing tiresome and fretful. Occasionally he would tumble about and fall forwards, or go around like a top, and then fall. Subsequent examination showed the face drawn to the right, internal strabismus ; pupils large and inactive ; left optic disc blurred, and gait unsteady. These symptoms became more marked. The left leg at times dragged, and later became partially paralyzed. Weakness and twitching of right facial muscles appeared and paralysis of the right sixth nerve. His irritability increased and there was a steady failure in strength. Vomiting only occurred twice. Then followed weakness of left arm, and later paralysis, dribbling, exaggerated left patella, tendon reflex, and finally death from exhaustion. On autopsy the whole of the pons was found involved in new growth, being much swollen on its anterior surface and bulging above in the fourth ventricle. Both crura cerebri were likewise enlarged by the extension of the growth and the nerves in relation with the pons distorted and compressed. The third nerves of both sides were flattened and displaced, and the sixth nerves wound round the bulging posterior border of the tumor, especially that on the right side. The tumor proved to be a typical glioma. A. F.

THERAPEUTICAL.

THE USES OF BROMIDE OF STRONTIUM.

There has always been a vaguely expressed but generally accepted opinion that strontium salts participate in the poisonous properties of barium on account of the close approximation which the two metals hold in their chemical position to the other elements.

The new and precise investigations, however, of Dr. Laborde, *Chef des Travaux Physiologiques à la Fàculté de Médecine de Paris*, have put an end to this legend; the communications made by this *savant* to the French Academy of Medicine and to the Society of Biology have established once and for all, that far from being harmful, pure strontium salts (Paraf-Javal) have on the contrary a favorable influence on the phenomena of nutrition.

The same authority showed that the previous contradictions and errors on the subject of the toxic effects of the strontium salts were due exclusively to the greater or less impurity of the commercial products used, containing small amounts of baryta.

Professor Germain Sée in affirming the absolute innocuousness and remarkable therapeutical action of the strontium salts (Paraf-Javal) in certain maladies mentions the fact that they were already the subject of an inaugural thesis inspired by the late Professor Vulpian, in 1885.

Drs. Constantin Paul and Dujardin-Beaumetz are not less positive of the merits of the strontium salts (Paraf-Javal).

Dr. Constantin Paul referring to his experiments says: "I gave six grammes daily of bromide of strontium (Paraf-Javal) to a young girl, suffering from hysterical epilepsy, for two months.

"The attacks had hitherto returned periodically before the menses and resisted the regular daily administration of four grammes of bromide of potassium.

"The bromide of strontium (Paraf-Javal) appears to have prevented the attacks, for they have not since recurred."

Dr. Dujardin-Beaùmetz found that bromide of strontium (Paraf-Javal) possesses the indisputable advantage of being better borne by the stomach than the other alkaline bromides.

The important position occupied by bromide of potassium in the treatment of nervous diseases is well known, but unfortunately if administered for any length of time it provokes intolerance which, in addition to a disturbance of general nutrition, gives rise to symptoms of intestinal sepcæmia, followed by cutaneous eruptions associated with tense depression and cerebral torpor.

It is therefore eminently desirable to find a substitute, a ccedaneum, to use a therapeutical term, for bromide of otassium, a drug in fact which shall possess all its advan- ges without its drawbacks.

That bromide of strontium responds precisely to this *esideratum* has been already proved by the clinical experi- entation made; the pure salt in crystalline needles, such s has been obtained by Paraf-Javal, such as is found in the olution prepared by Chapoteaut, is soluble in all propor- ons of water; it is with this salt and this alone, on account f its perfect preparation and absolute purity, that clinical esearches have been brought to their present pitch of con- ancy and precision.

At the *séance* of the Society of Biology (Paris), October 7, 1891, Dr. Ch. Féré in reporting the results observed his hospital practice at Bicetre,[1] referred to the interest- g case of a patient treated with ten grammes of bromide of otassium daily, in whom the cutaneous eruption persisted spite of intestinal asepsis. This patient was given the me dose of bromide of strontium (Paraf-Javal), and equally ood effects were obtained therapeutically without any ndesirable symptoms. Intravenous injections in rabbits ave shown that these animals support eighty-five grammes f bromide of strontium as against fourteen of bromide of otassium. This proves that bromide of strontium (Paraf- aval) is six times better tolerated than bromide of potas- ium.

Professor Germain Sée says of pure bromide of strontium Paraf-Javal) that " it never produces any disastrous effect n the stomach even in large doses. It may be taken in oses of four grammes (sixty-two grains) at each of the ree daily meals. Out of thirty-two patients suffering om gastric dilatation, several have been improved, and ome altogether cured. I believe that the bromide of trontium (Paraf-Javal) will advantageously take the place f bromide of potassium, and especially the polybromides, the treatment of epilepsy." (Académie de Médecine,)ctober, 1891.)

The abundant evidence at our disposal proves that the ure bromide of strontium (Paraf-Javal) responds to the ame indications as bromide of potassium, over which it as the immense advantage of being admirably tolerated; or even in large doses it produces no accidents. F. M.

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[1] Comptes-rendus de la Société de Biologie, p. 665.

METABOLIC ELECTRIC POLARITY AND ELECTRO-THERAPEUTICS.

(Medical and Surgical Reporter, Nov. 14, '91). The main contention of a paper by W. J. Morton, M.D., is deductively that as morbid and normal processes in living tissues proceed by chemical exchanges (plus an unknown directive tendency) from assimilation of food through excretion, viz., by metabolism, differentiated into anabolism and katabolism; and as it is probable that chemical exchanges like this cannot occur without exhibition of electric polarity and electric currents; and since experimentally this electric polarity is demonstrable; and since, as the author claims, this polarity must, if due to chemical exchanges of metabolism, be electro-positive in its internal circuit, because katabolic, and therefore initiated by the avidity of the oxygen atom (or its congeners) for the atoms of the tissue subject to combustion; and since, if, as also claimed, this polarity be admitted to be due to chemical changes, it must equally be admitted to represent, not only a transformation into electric energy, but also into heat, and all kinetic energies of the living organism. Consequently this initial, invariable, electro-positive polarity may be considered an invariable guide to the electro-therapeutist. Disease and also normal processes, focal positivity (corresponding to the zinc element of a voltaic cell), may be ascertained to be an invariable element of its progress, and hence combated by an inverse current or applied extraneous medical polarity which may augment, annul, or reverse the initial focal positivity, and therefore augment, annul, or reverse the chemical exchanges underlying it. To employ this guide in practice, normal and morbid metabolism, but first confining attention to the morbid, it may be said to consist of: (a) Overactive chemical exchanges, and (b) underactive chemical exchanges. In over-activity, (a) an applied (medical) positive pole will increase the activity, *i.e.*, augment the disease; (b) an applied negative pole will decrease activity, *i.e.*, lessen disease. In under-activity, (a) an applied positive pole will increase the activity; (b) an applied negative pole will decrease the activity. Two curative directions only of treatment are open, the negative pole in over-activity, and the positive pole in under-activity. These four results may be obtained by applying a voltaic battery to a single cell. What may be true of morbid processes is regarded likewise true of normal processes. The current of action is explained on the supposition that unstable endothermic substances formed by prooplasmic voltaic action at the negative element during epose, are decomposed and produce a current in an opposite lirection. The chemical, oxidizing, katabolic, protoplas-nic foci of the liberated energies are ascertainable by the eculiarity of—the electric—that it inhibits polarity.

A. F.

Society Reports.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of February 2d, 1892.

The President, Dr. L. C. GRAY, in the chair.

PACHYMENINGITIS AND MYELITIS.

Dr. MARY PUTNAM JACOBI read an account of a case of his condition which was at first supposed to be due to a 'ott's disease, but where a solid tumor had developed gainst the spine during the last weeks of life and was di-gnosed as sarcoma. The case was compared with one elated by Dr. Gee, in the St. Bartholomew Hospital report, nd close resemblances pointed out between them. In Dr. iee's case the sarcomatous nature of the disease was dem-nstrated by an autopsy, which could not be obtained in he case under discussion.

THE SURGICAL TREATMENT OF EPILEPSY.

By JOSEPH PRICE, M.D.,

Philadelphia.

Epilepsy was defined as an apyretic, nervous affection, haracterized by seizures of loss of consciousness with tonic r clonic convulsions. Its history, from a therapeutic stand-oint, was one resource of scientific medication. Its treat-nent had been one of trial and disappointment, for it still emained one of the greatest opprobria of medicine. Its at-acks were visited upon both sexes, hystero-epilepsy for the nost part being confined to females. These latter class were ttacked when a marriageable age was reached. Debauchery ad frequently led to it. Young widows were prone to ttacks, and its origin, outside of physical causes, might be raced to amorous songs and certain stimulants such as hocolate and coffee. For its cure various suggestions had een made, among other things that of resorting to venery. t had, however, been abundantly proven that excessive ust had produced epilepsy, and was no doubt yet to be recognized as a great factor in its causation. That it was transmissible did not admit of dispute any more than that it was caused by traumatism. Operative interference in the traumatic cases, for the removal of the cause was both logical and often successful. The operation of clitoridectomy had brought Baker Brown into disrepute, and yet we had to-day no less a person than Lawson Tait boldly expressing the opinion that here was doubtless a place for the operation. The belief that a moral element must be reached in addition to the physical interference was no doubt justified by the facts. One table that the author had consulted gave as high as 73.7 per cent. of cases cured of masturbation by clitoridectomy. This surely made it not presumptive in its claims for recognition. Epilepsy in women appeared to be more fatal than in men. The acquired epileptic habit was more fatal than the congenital. In the congenital it was two to one, and the acquired three to four fatalities in women to one in man. As to the inheritance of the disease, it was sufficient to note that among epileptics marriage should be discouraged. The history of eunuchism as a preventive of epileptic propagation, and also the edicts forbidding their marriage were of interest to the student of law as well as to the theologian and physician. In the treatment of epilepsy proper there was no doubt that surgery must form an important factor in the hope of cure, whether done for direct traumatic results or for the removal of reflex causes. In entering upon the consideration of the removal of the appendages in women for the cure of epilepsy it was unnecessary to take up in detail the history of castration as practiced upon the male for the same purpose. Suffice to say that the history of this operation, both from a priestly standpoint, and from a carnal or musical standpoint, was often instructive and often horrifying. The mortality was often simply terrible, while the practice of mutilating children to preserve their voices for song, marked an era of refined religious cruelty scarcely conceivable. So far as the surgery of the disease was concerned in a general way operation had the best of the argument. Out of seventy-one cases treated medically, and out of a second series of seventy-one treated surgically, statistics showed that of the surgical treatment all were at least benefited, while of the medical series a great proportion showed no effect at all from treatment, and in others the conditions were aggravated. In a general surgical way then, if operation was beneficial, when it could be directly traced to the ovaries or their diseases, logical deduction would seem to indicate that beneficial results might at least be hoped for. So far as unsexing epileptics was concerned, the author did not understand why there was reason to feel compunction at such a suggestion. He could hardly question the protective value to society, not only of forbidding epileptics to marry, but of rendering them unable to pro-create. A wise legislation would of course be needed to prevent abuse, but the essential right of society to protect itself, ought not to be questioned. Going aside from the actually demonstrable disease, what was to be done in the presence of epilepsy where disease was doubtful ? If we had an unmarried woman in whom every menstrual period, from the initiation of her puberty to the time that she came under the physician's care, was marked by an epileptic seizure, who at other times was entirely free from attacks and showed no tendency to fall into them, who recovered as soon as the period was over and who had no other demonstrable disease, or probable cause of seizures than her monthly irritation, it seemed there was little doubt that operation was justifiable. Unless we could thus pin down the seizures to definite time and cause, the author held that it was wrong to burden surgery with a class of cases that could only fail and detract from its good name, while it did no possible good to the individual. If ovarian disease was found to be the cause of the epileptic seizures, it was of no use to do a partial removal and expect relief or cure. The effect obtained might be due to either one of two causes : first, to the removal of an irritable or diseased organ whose presence stirred up the reflexes into a commotion, or the relief might be due to the excitation by operation of a different epileptogenic zone. Charcot had laid down as a principle that irritation of one epileptic zone might be relieved by irritation or pressure upon another. Assuming it as a fact that the disease was often a reflex manifestation of a local trouble, it followed that in those diseases in which deposits were found as a result of systemic affection, resort should be had to recognized remedies, and the chances for effecting a cure were equal with those of surgical cases where operative interference was resorted to.

Dr. C. A. HERTER thought it unfortunate that no autopsy had been made in the case reported by Dr. Jacobi, as the diagnosis seemed open to a good deal of speculation. There was apparently no justification for the assumption that two lesions existed, and a single one would explain the symptoms. This lesion may have been one of sarcoma or tubercular disease, and it would be difficult to determine which. The existence of malignant disease was probably out of the question.

Dr. W. H. THOMSON disagreed with the last speaker. The chief point of interest was in the fact that there may have been two distinct lesions in the cord, presenting in their symptoms the contrast in the nature of the lesions. It was well known that in the case of tumors pressing upon the cord there was present as a symptom local pain, especially in movement of the parts.

Transverse myelitis there would be present this kind of pain and, unless accompanied by distinct meningitis, there would be no irritation of nerve roots. Therefore, according to description, there might have been two conditions of the cord occurring in the same patient. The symptoms developing afterwards in the legs were the sequelæ of transverse myelitis. Finally the effect of the presence of a tumor invading and spreading into the tissues was simply pressure at that point.

Dr. B. SACHS doubted if in the majority of cases there was myelitis associated with the presence of a tumor, though in a tuberculous case these sometimes occurred.

Tubercular myelitis was distinguished by being more destructive to the substance of the cord than other forms.

Dr. JACOBI said that the reason for supposing that there was a second lesion differing from the original one was the persistence of the epigastric reflexes. It was presumed that there was a tumor of the cord beginning in the first dorsal vertebra, causing a pachymeningitis at that point followed by a meningitis.

Dr. H. J. BOLDT, in opening the discussion of Dr. Price's paper, thought that some nervous diseases might be due to menstrual disorders, but they were not numerous. The removal of the adnexa was one of the gravest operations in surgery, both in its medical and medico-legal aspects. It was most important to select cases. When absolute pathological conditions were present and treatment had been carried on unsuccessfully by all the methods known to the profession, and when the gross lesion could be discovered to be present in the adnexa, then operation was perhaps justifiable and good results might accrue. If the epileptic attacks were restricted to the menstrual period, and it was concluded that the prime cause lay in the adnexa, then operation might be resorted to but little else but bad results were to be expected.

Dr. G. M. HAMMOND thought that two points should be borne in mind, the establishment of the epileptic habit and he influence of pathological conditions of the uterus and varies in producing epilepsy. The fact that operations erformed on the brain for the relief of epilepsy, when there xisted a well-defined lesion, were not in a majority of ases followed by cure of the seizures was well known now. The habit persisted and many of the cases so operated upon vere reported cured too soon. The condition was in fact nly abated or dormant for a more or less limited period. As to the influence of abnormalities of the genital apparatus n the production of epilepsy it seemed to the speaker that hose of the uterus were more potent than those of the varies. Lacerations, malpositions, and inflammations of the terus, were more likely to cause epileptic seizures than rritation of the ovaries. At a time when gynæcologists vere removing ovaries by the bushel the speaker had ought to inform himself of some of the results by writing o a number of asylums. The questions put were as to the ases of melancholia in which operation has been done. He ad received a stock of reports. The consensus of opinion vas to the effect that epilepsy and insanity had not been elieved by removal of the ovaries. As to the effect of variotomy in producing insanity, he had seen four or five ases of epilepsy and hystero-epilepsy come on in a few lays after ovariotomy was performed. Others had met vith the same experience; while he had seen some cases of nsanity and melancholia recover after relief from uterine rritation, he had never seen such results follow ovariotomy.

Dr. **BUCKMEISTER** said it was hardly fair to call epilepsy disease. It was a collection of symptoms which had no natomical basis. It was influenced by irritation of all inds, and naturally those produced in the reproductive rgans would be of the most marked character, though observers were not agreed upon the exact rôle which these rgans played in this respect.

The previous speaker was probably correct in assuming hat more irritation could arise from injuries of the uterus han from lesions in the tubes or ovaries. Evidence was so strong that no good was accomplished by ovariotomy in he conditions under consideration that the operation was to be condemned.

Dr. W. M. **POLK** said his experience of the results of operations for the cure of hystero-epilepsy was limited to three cases, and was not such as to embolden him to continue the procedure. Two of the patients had become insane, and the third one was in a distressing condition of nervous irritability. Epilepsy was still really a fruitful field for investigation. It must be remembered that eighty per cent. of women were stated to be hysterical.

A large amount of epilepsy was known to be due to peripheral irritation, and there was no reason why the ovaries should not set up some of this. If they did this they should be taken out.

Dr. SACHS had seen a number of cases in which operation had been done, and with no effect upon the epilepsy. It was a mistake to remove ovaries because the patient had epilepsy at the menstrual period. If it could be proven that the person had no congenital epilepsy, and that the first attack came on with menstruation and occurred constantly since, but only at the menstrual period, there might be some fair reason to remove some of the sexual organs. Because a woman was an epileptic, and had sensitive organs which could be removed, was a ridiculous argument in favor of the removal.

Dr. L. WEBER did not take the view that the irritation following lacerations of the uterus was a cause of epilepsy. In a large experience of twenty-eight years he had never seen more than two cases in which the epileptic condition had been thus induced, unless there was a history of hysterical or epileptic taint before the age of puberty. He believed that true epilepsy acquired from lesions of the genital organs was a rare condition. He would only give his consent to operative interference on very narrow grounds, and where there was a fair hope that by removal of the ovary the condition could be cured.

Dr. BUCKMEISTER explained that he did not mean that injuries to the uterus following parturition were active in producing epilepsy, but that of all lesions to the reproductive organs these were most likely to act as irritants, and were, therefore, quite likely to result in the nervous condition under discussion.

The PRESIDENT said that all neurologists were agreed that what was called the epileptic state was nothing more than a symptom indicating intra-cranial disturbance, spinal or peripheral nerve irritation, or inflammation of the visceral nerves. The most frequent source of the symptom lay in intra-cranial disorders.

Spinal epilepsy was rare, as was also that arising from peripheral irritation. How important a part the abdominal nervous system played was not quite known. But the most uncertain of all was the influence of the female organs in producing the epileptic symptom. At any rate there was not a single reputable record of the cure of epilepsy ; not one that would stand the test of examination. To report relief for a few months, or even a few years, was to report nothing, and this was all that had been done. Almost every therapeutic or surgical measure had done good, but there was nothing more in the way of cure reported by modern effort than could be found chronicled by Escarol in 1828.

Dr. PRICE closed the discussion by reiterating his opinion, that permanent benefit was possible in properly selected cases.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Stated Meeting, January 25, 1892.

Dr. CHARLES K. MILLS, in the Chair.

ABSTRACT.—A FURTHER REPORT UPON THE USE OF BROMIDE OF AMMONIA[1] AND ANTIPYRIN IN EPILEPSY.

BY CHARLES J. POTTS, M.D.

Since the first report was made upon this subject in the "University Medical Magazine," for October, 1890, thirty cases have been treated by this method, with the following results: eight did not return after the first visit and three received no benefit. The following cases are reported as having been remarkably benefited.

CASE I.—P. McK., male, æt. thirty-two. Had been having one spell a week since childhood; he has been under treatment by this method for two years and has had but thirteen spells of lessened severity.

CASE II.—W. S., male, æt. thirty-two, first spell three months ago; has had twelve since. Number of spells reduced to four in nine months.

CASE III.—H. S., male, æt. fourteen. Has been having six seizures a week for past three years. Under treatment; had eleven spells during first six months; further reduced to but one during the following year.

CASE V.—W. R., male, æt. twenty-five. Seven to eight spells a week since infancy. During five months' treatment averaged seven fits a month.

CASE VIII.—W. R., male, æt. thirty-one. Has been having very frequent epileptic seizures since he was three years of age. These were reduced by the treatment to eighteen of decreased severity in a year.

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[1] Published in University Medical Magazine, February, 1892.

CASE IX.—G. H., male, æt. twenty-three. First spell three years ago; has averaged one a month since. During a period of nine months has had no spells, and describes himself as "enjoying the best of health."

CASE X.—E. Y., male, æt. fifteen. Had one severe spell a month and about twelve "light ones" every day; at end of two months he was averaging one mild spell a day. Had gained flesh and mental condition was improved.

CASE XIII.—Female, æt. three. Number of spells reduced from three a week to two in a year.

CASE XIV.—Female, æt. two-and-a-half. Three to four spells a week; no relief was afforded during first three weeks of treatment, at the end of which time improvement commenced, and when last heard from she had had no spells for six months.

The advantages claimed for this combination are, First, that it exercises a most powerful influence in decreasing the number of epileptic paroxysms. In the majority of the cases treated the average number of seizures had either been stationary for some time or was increasing, and they had previously been treated with other drugs. Second, that when a seizure does occur it is of much lessened severity. Third, while lessening the number and severity of the seizures, it does not do this at the expense of the remaining physical and mental health of the patient. The doses used were of antipyrin, eight grains, ammonium bromide, twenty grains; children in proportion.

TREATMENT OF EPILEPSY BY ANTIFEBRIN AND SULPHONAL.

Dr. HINSDALE made a report of the use of antifebrin in epilepsy at the Infirmary for Nervous Diseases. Better results were obtained in the lesser epilepsies in which bromides failed than in the greater epilepsies. One case was reported in which bromides made the condition worse, while antifebrin kept the attacks down to such a number as to make it possible to follow his vocation as a compositor. He took from ten to twenty grains three times a day for three years, and excepting an appearance of slight cyanosis there was no evident disadvantage in its use.

Nine other patients were temporarily benefited by antifebrin, but eventually were compelled to return to bromides.

Sulphonal was used in a large number of cases, seven of which were reported as having been under treatment a sufficient length of time to form an estimate of its value.

The dose employed was from three to six grains three times a day, and the period of treatment varied from one month to ten months.

In one case, Maggie E. R., aged twenty, epileptic attacks occurred weekly. Duration of seizure variable, from one minute to one hour. Convulsions general. *Petit mal* two or three times daily. Sulphonal in three or six grain doses thrice daily mitigated the severity of the attacks and reduced them in frequency, so that after three months and a half of treatment only one attack had occurred during a period of eight weeks. She is at present taking five grains of sulphonal three times a day.

Besides these a large number of other cases of epilepsy were treated with sulphonal. The results were variable; temporary improvement was usually noted, but in many instances the patients failed to continue its use for a sufficient length of time.

The dose for children is three or four grains, and for adults, six or eight grains, three times a day. Frequently patients are made sleepy by the use of sulphonal in these amounts. In that case two doses daily may be given.

The best results from sulphonal are in those cases where bromides cause so much skin trouble or mental disorder that their quantity must be lessened or altogether suspended; then sulphonal becomes valuable.

DISCUSSION.

Dr. **Francis X. Dercum.**—I have had the opportunity of observing both methods of treatment—that employed at the University of Pennsylvania and that used at the Infirmary for Nervous Diseases. The mixture of bromide of ammonium and antipyrin acts differently from either drug alone. Certainly antipyrin by itself will not decrease the number of attacks, and antifebrin will do it only occasionally. When antipyrin is added to the bromide it increases its efficacy. In this way a much smaller dose of bromide need be given and thus the liability to acne and bromide dementia is lessened. At a recent clinic, Dr. H. C. Wood mentioned a peculiarity which he thought that he had observed in those patients who took antipyrin and the bromide for a long time, and that is that there seemed to be a lessening of the heat-producing power. Such patients found that they had to dress more warmly than before, even quite heavily in comparatively warm weather.

When I spoke to Dr. Hinsdale of sulphonal as second to the bromides, I meant bromide mixtures in general. Sulphonal has, in my experience, a decided value in diminishing the number of epileptic attacks. I can recall, however, several cases in which the attacks of epilepsy recurred as soon as the dose of sulphonal was diminished short of an amount necessary to cause drowsiness. If in a given case four or five grains were sufficient to produce drowsiness, no attacks would occur as long as this dose was continued, but the moment the dose was lessened the attacks recurred; and in a few instances when the sulphonal was kept up in full dose, the attacks would occur after a time with great violence, although their onset had been delayed. However, in a number of instances I have succeeded in markedly diminishing both the violence and the frequency of the seizures by very moderate doses of the drug, and its chief value seems to be that it can be administered for quite long periods in place of the bromides thus enabling the patient to rally from the depressing effects of the latter. I have had four or five cases in which I alternated between sulphonal and the mixture of bromide of ammonia and antipyrine successfully for long periods. The prolonged administration of antipyrine apparently has no bad effect. But after it has been given for a time it is well to alternate with some drug that has less power.

Dr. D. D. STEWART.—Would not some other bromide answer as well in this combination as that of ammonium? The ammonium salt is the worst tasting of the bromides. I have used potassium bromide with antipyrin with advantage. I have found this combination singularly efficacious in a girl who was having frequent attacks. She had been under my care for about a year and I had tried almost everything without effect, until I put her on eight grains of antipyrin with twenty grains of potassium bromide. Under this treatment, she had in a period of two weeks, only one light seizure, although prior to this she had from three to eight attacks a day, notwithstanding she was taking large doses of potassium bromide.

I would ask if there is not some danger from giving sulphonal in doses of six or eight grains, three or more times a day, for any length of time? I believe that nephritis has been observed to follow the use of sulphonal.

Dr. J. MADISON TAYLOR.— I testify gladly to the value of antipyrine in combination with a bromide. I would like to know of any good reason why the bromide of ammonium is thought best to go with it, however; that of lithium has served me well in this connection. In a few instances this mixture has wrought most satisfactory results at my hands; not curative but largely palliative and promising even better.

Sulphonal has disappointed me. The cases Dr. Hinsdale relates are well known to me at Dr. Mitchell's clinic where we hoped much from this drug. In certain instances there antifebrin gave excellent results causing, however, a steady cyanosis at times which seemed menacing, but really working no hurt. There are yet combinations to be learned which promise better than any single drug.

Dr. James Hendrie Lloyd.—We hear a great deal about the poisonous effects of antipyrin. I would be glad to hear the opinion of those who have used antipyrin for a long time; does its use lower nutrition or tend to impair the vitality of the patient? I have myself used antipyrin to a considerable extent, but I have failed to convince myself that it has any serious effect in ordinary doses. Certainly its dangers are not so great as are popularly supposed. Have there been any studies made of the blood after the use of antipyrin? I saw recently a statement, which was not substantiated, that antipyrin has not only a depressent action upon the nervous system, but also a disturbing action upon the nutrition and composition of the blood.

Dr. Joseph Leidy.—Some three years ago I reported a series of cases of epilepsy and other neuroses treated by the use of antipyrin and antifebrin. Several of these cases were under the care of Dr. Wood. It was found that antifebrin proved more efficacious than antipyrin. In one case under treatment for several months antipyrin was used in quite large doses, as much as sixty grains a day. It diminished the number and the intensity of the attacks, but as soon as the drug was withdrawn they recurred with great frequency. I think that thirty-one cases were reported, in four the attacks were considerably lessened by antipyrin, but in the others the drug had no effect. Upon the lesser epilepsies, antipyrin seemed to have considerable effect. In the majority of cases of *petit mal* the attacks were not only diminished, but were completely obliterated during the time that the drug was used. With antifebrin the results were better, in many of the slight epilepsies the attacks did not return after four or five months. I know of no case.

Dr. W. H. Bochroch.—At the nervous department of the Northern Dispensary four cases of epilepsy are under treatment with antipyrin in combination with bromide of ammonium, or bromide of potassium. In all there has been a diminution of the number of attacks, and in two there is reason to hope that the attacks will remain away for some time. Two cases have been under observation for four months, and they show no change in nutrition.

Dr. THOMAS J. MAYS.—I have had considerable experience with the administration of antipyrin, phenacetin, and antifebrin, and have given these agents for long periods. I think that there is a view abroad that these agents are depressent and really toxic. I think that this view is not borne out by anything that we know in the way of experimental research or clinical observation. Some have a horror of giving these agents in fever on account of the fear that they cause depression of the heart and collapse. Experiment on animals show that these agents do not have a depressing influence upon the heart. If there is any influence at all, it is to cause elevation of the blood pressure. I have given phenacetin and antifebrin for long periods. I have one patient who is under observation at the present time who has taken three or four grains, four times a day, for more than a year without any toxic effect that I can see, and the disease for which it was given, namely asthma, has entirely disappeared. I have given antifebrin in enormous doses to phthisical patients—as high as eighty grains a day for six or seven days. This is an agent which you cannot give in large doses for any long period. I used it to depress temperature, but at the end of this period I have suspended it on account of the cyanotic appearance which it calls forth. This is not a true cyanosis, but a discoloration partly due to the decomposition of the blood. Antipyrin can be continued for about three weeks, when it produces an uncomfortable, distressing rash.

Of the three agents mentioned, I think that phenacetin is the least likely to cause trouble, antifebrin has to be suspended on account of the discoloration, and antipyrin on account of the urticaria-like eruption, and even the ulceration of the skin which it produces when it is continued more than three weeks in seven-and-a-half grain doses repeated every four hours. My experience has not been such as to make me think that these agents are depressent, but of course, if given in excessive doses they will depress just as well as other agents.

Dr. FRANCIS X. DERCUM.—I have given antipyrin in ten grain doses four times a day for a very long period, but have never observed any rash, I should regard this as rather the exception than the rule.

Dr. CHARLES K. MILLS.—I have used antipyrin, antifebrin, sulphonal and most of the other remedies which have been recommended, but I have invariably been driven back for most cases to the combination to which I resorted many years ago, that is, of the bromides with Fowler's solution and conium. This in the majority of cases gives the best results. Of course with all of these drugs you have to use nutrients and tonics.

Dr. JOSEPH LEIDY.—I should like to report the results of a *post-mortem* in a case of death after the use of large doses of antipyrin. The patient was a man of forty-five or fifty years, who for about five weeks had been given antipyrin for epilepsy. The number of attacks diminished considerably, there was marked cyanosis which was invariably found after the use of antipyrin, and was more marked with antipyrin than with antifebrin, but I do not remember the occurrence of a rash during or following the administration of these drugs. At the autopsy this case showed great congestion of the brain with œdema at the base. The internal organs also were congested. It was the opinion of those who had had this case under observation that death was due to this action of the drug, and in all probability to a direct action upon the hæmoglobin of the red-blood corpuscles. The blood of the epileptic cases was also examined, to determine the amount of hæmoglobin, and also the number of corpuscles. Antipyrin seemed not only to diminish the number of corpuscles, but also the percentage of hæmoglobin. The corpuscles were reduced to three or three-and-a-half millions in the cubic millimetre, and the hæmoglobin to seventy or eighty per cent.

Dr. C. S. POTTS.—Our reason for using the bromide of ammonium is that Dr. Wood believes that it has a more powerful influence than the other bromides, and from some comparative trials made, such seems to be the case. In none of the cases in which I have given the bromide of ammonium and antipyrin, have I seen any bad effects. Those cases that were reduced in health have improved.

I should like to read the report of a few cases treated in this way by Dr. Hay, at the State Asylum for the Insane at Morris Plains, N. J., and published in the "Medical Age," July 25, 1891.

Male, æt. forty-five. For eight months previous to the commencement of this treatment he had, on an average, thirteen convulsions a month, all extremely violent, and attended by pre-epileptic mania of short duration. During this time he was taking nitro-glycerine gr. $^1/_{100}$ four times daily. In October he was placed upon bromide of ammonium, gr. xx, with antipyrin, gr. vii, and at the end of one month the antipyrin was increased to gr. x in each dose. In all he took this combination three months with the following result: during the first month he had twelve seizures;

during the second, nine, and during the third month, only three fits. The character of the fits was modified favorably, and he was far less violent than usual.

Male, æt. thirty. In eighteen months previous he had an average of twelve convulsions a month, during which time he was given antifebrin, gr. viii three times a day. He was placed upon antipyrin and bromide of ammonium, and it was continued three months and a half, during which time he averaged eight fits a month.

Male, æt. thirty-eight. Convulsions date back fifteen years. He has unusually violent attacks, with acute mania preceding them for some hours. After a succession of fits he would fall into profound coma lasting generally four days, after this the man would be dazed and stuporous for a few days more, when he would become sane, and remain so until the next attack. He had received a prolonged course of the bromide of sodium and other drugs without any favorable result; during the three months the antipyrin and bromide of ammonium was administered the attacks were mild, unattended by mania, and only followed by a slight degree of coma.

Male, æt. forty-six years. Epileptic since ten years of age; six years ago began to be maniacal at his convulsive periods, which occur two or three times a month; had been treated chiefly with the bromides; during the previous six months he had had twelve convulsions; during the three months he was given the antipyrin and bromide of ammonia, he only had one convulsion, which was unattended with mania.

Male, æt. eighteen. For thirteen months prior to trying this mixture, during which time he was successively treated with the bromides, ergot, nitro-glycerine and antifebrin, he had an average of seventy-four convulsions a month. He was given antipyrin, gr. viii, and bromide of ammonia, gr. xx to i.d., and for *the first time* a reduction in the number of fits occurred, the average number per month for three months falling to sixty.

REPORT OF AUTOPSY ON A CASE OF THORACIC ANEURISM IN A PATIENT PRESENTED TO THE SOCIETY FOR DIAGNOSIS SOME MONTHS BEFORE DEATH.

By Dr. THOMAS J. MAYS.

J. E., aged forty-eight. Park policeman; was sent to me for examination by Dr. Chas. K. Mills, October 28, 1890, and from him I obtained the following history: For about vo years he had been subject to very acute pains around ne left base of his chest, which seemed to be of a more r less intermittent character. Exercise produced shortess of breath, and also seemed to excite and produce this ain. There was no dysphagia or dyspnœa when his body as in the recumbent position; and no pain in the anterior ortion of the chest. Occasionally he had a hacking cough, ery little expectoration, and never had hæmoptysis. His apetite was good, bowels regular, and his pulse 100. Had no enereal disease except gonorrhœa, which was followed by neumatism. During the previous five months he lost twenty ounds in weight. His family history was entirely negative.

Physical Signs.—On inspection, and palpation I found a ulsating prominence in the left infra-clavicular region, and the junction of the first intercostal space with the sternum nere was a marked dull area, of about one-and-a-half inches quare, which shaded off to the left, and downwards into iminished percussion resonance. Over the dull area there as audible a diastolic murmur, which was transmitted om an aortic regurgitation, which also existed. There as no murmur anywhere else. There was no asynchronm between the two radial pulses, or between either dial and either carotid pulses, and none between the apex npulse and the femoral pulsation. I must say, however, nat the two last pulses were not compared after the first xamination, and that if this had been done a difference night have been discovered subsequently.

In the upper part of the left lung the respiratory sounds ere partially suppressed, and some sibilant râles were eard in the same area.

In the following two weeks I saw him three times, durg which period he developed a sharp croupy cough, and ecame subject to pain in the upper part of the left chest, hich radiated down his left arm. He died May 29, 1891, nd the following day Dr. John C. Heisler made a *postortem* examination and found the following conditions:

Both pleuræ adherent; right more so than left. Left leural cavity filled with recent dark blood clots. Left ng crepitant at base and apex, but congested in middle ortion, and the whole was very much atrophied.

In the latter area there were several hæmorrhagic inrcts. Right lung was consolidated at the base, and ongested throughout the upper portion. There was no reaking down, or excavation in either lung.

The pericardium contained about a gill of serum; size of eart normal, with the exception of a slight hypertrophy of he left ventricle. There was a leak in the aortic valve.

An aneurism, about the size of a fist, which had ruptured and emptied its contents into the left pleural cavity, involved the left transverse and descending portion of the arch of the aorta, without implicating the subclavian artery, and contained organized and recent clots.

Additionally there were also erosion and partial perforation of the second and third dorsal vertebræ, and some erosion of the necks of the second and third ribs.

Dr. CHARLES K. MILLS.—I brought this patient to this Society about seven months before his death as a case of probable lesion in the posterior mediastinum. His history has been published in THE JOURNAL OF NERVOUS AND MENTAL DISEASE, December, 1890. The first symptom complained of was pain under the left scapula, and was almost the totality of his symptoms when he came to me. The question of exploratory operation was considered. He lost flesh and developed other symptoms, one of which was unilateral sweating. He was examined by a number of the members present, and a number of diagnoses given. Thoracic aneurism was first suggested by Dr. Mays, but unfortunately he changed to tumor in the posterior mediastinum. Among the diagnoses suggested were aneurism, local neuritis, tuberculosis, a small unilateral growth, and local meningeal inflammation. The greatest interest in this case relates to the study of the early symptoms. The patient had passed through the hands of a number of physicians, but a correct diagnosis was not made, although the possibility of aneurism was considered.

Dr. FRANCIS X. DERCUM.—It is interesting to recall that one of the symptoms which suggested to Dr. Mays' correct diagnosis in this case was the presence of slightly unequal pupils. The localized character of the pain and the absence of general symptoms were highly suggestive of a growth. Regarding the want of asynchronism between the various pulses, I would suggest that in a case so obscure as this studies should be made with a Marcy tambour apparatus.

Dr. JAMES HENDRIE LLOYD.—It will be remembered that this man had no symptoms of pressure on the cord. He had nothing but the irritative symptom of pain in the course of one nerve. We should also bear in mind that unequal pupils may occur in lesions of the cord high up, so that this sign may lose its value in some cases for distinguishing aneurism from an obscure cord lesion. I think that those of us who examined this man may claim at least some credit for conservatism shown in advising against

eration. While an accurate diagnosis was not made, and
rhaps could not have been made from the few symptoms
esent, there was some temptation to advise an explora-
ry incision, which temptation fortunately was resisted.

Dr. D. D. STEWART.—I recently made an autopsy in a
se of aneurism in which the cord in its membranes lay
re in the sac of the aneurism, without there being any
gns of myelitis. The man had simply irritative symptoms.
here was a girdle sensation on that side, a slight area of
æsthesia, both knee-jerks were increased, and there was
eat increase of the reflexes about the abdomen.

Stated Meeting, February 22, 1892.

The President, Dr. F. X. DERCUM, in the chair.

Dr. C. S. POTTS reported

CASE OF HEMIPLEGIA, FOLLOWING PENETRATING WOUND OF THE BRAIN, WITH RECOVERY.—The patient exhibited. (See page 276.)

The PRESIDENT.—This case presents a number of points
interest. In the first place, the occurrence of hemiplegia
e to a wound of the brain, and secondly, not followed by
scess. This absence of suppuration calls to mind the ex-
riments of Dr. Spitzka in which he injected substances
ptic in character such as earth, mud, etc., into the brains
dogs without abscess following.

In the third place, the case is of interest from the occur-
nce of temporary aphasia followed by a recovery, in which
dialect used only in childhood and early youth reappeared,
d followed still later by the incomplete recovery of the
oper English language.

Dr. CHARLES K. MILLS.—It would seem hardly neces-
ry to hold that the loss of language was due to a general
ock to the brain. It was more probably due to injury of
ird frontal convolution itself. The direction of the
netrating instrument was such as to destroy par-
lly this convolution, or, as Dr. Potts, suggests the
ternal capsule rather than the convolution itself. If the
ird convolution and its neighborhood were injured, we
ould have destruction of the power of propositionizing
the ordinary manner, and I suppose that in such a case,
e would naturally go back to the language which was
ost elementary. Language, like every other function of
e brain, is organized most deeply in the lower strata of the

brain. As the part recovered from the effects of the injury and of pressure, the later acquired speech faculties would be regained. Evidently in this case the temporal lobe was not affected, and in all probability the island of Reil was not injured.

Dr. **GUY HINSDALE** read a paper on

INFLUENCES MODIFYING THE OCCURRENCE OF CERTAIN NERVOUS DISEASES IN THE UNITED STATES. (See page 268.)

DISCUSSION.

Dr. **J. P. CROZER GRIFFITH.**—The only thing which I wish to add to the very interesting paper of Dr. Hinsdale's is the result of my own observations, together with the general popular and medical impression regarding the effect of high altitude upon general nervous conditions. It seems to be an impression among many in the west that one is not able to perform the same amount of mental work at high altitudes, such as that of Colorado Springs, as can be done in the east. If you will allow me to talk about myself, I want to say that I went to Colorado Springs last March to remain several months. My health was perfect, and I laid out for myself considerable literary medical work which I had had on hand for a long time. Medical friends in the place assured me that I would not accomplish much, —that nobody did. I was disposed to laugh at the idea, but they were right, and I was wrong. For some reason I found it difficult to concentrate my thoughts in any continuous mental effort. Were this my own experience only, I would not relate it, as it might perhaps be accounted for in other ways.

It is also well recognized in Colorado Springs that persons of a nervous disposition frequently do not do well at that altitude,—about 6,000 feet,—and that in some instances they are entirely unable to remain and enjoy any comfort in life.

One instance I call to mind especially, in which a family appears to have been actually disrupted by the influence of the climate. The father and husband, a sufferer from phthisis, is obliged to remain in Colorado Springs, the wife is so affected nervously by the altitude, that she cannot remain, and the son, likewise, is compelled to live at a lower altitude on account of heart disease.

Referring again to my own sensations, I found that for the first part of my stay, I could for some reason sleep but poorly, though I never have any such trouble here. I do not think I am alone in this experience.

Again, it is reported among local physicians, that persons coming from the east are much disposed to neuralgias. I am never troubled by it, but soon after reaching Colorado Springs, I was attacked by severe supra-orbital neuralgia, which continued for three weeks. Like the other features mentioned, I would regard this as a coincidence were I alone in the experience.

I throw out these personal experiences for what they are worth,—very little, I know, by themselves. But I believe that the general opinion of the physicians of these regions is worth a great deal.

We should therefore hesitate before sending to a high altitude, persons with well-marked nervous erethism. Even in phthisical patients we should seriously consider whether the bad effect on the nervous system may not counterbalance the benefit which otherwise might accrue to the pulmonary condition.

Dr. J. MADISON TAYLOR.—An important practical point was referred to by Dr. Griffith which I wish to emphasize as of my own experience. I spent over six weeks once in the Rocky Mountain country at an altitude of between eight and ten thousand feet enjoying perfect health with four others. We all slept badly, and many who I met before after similar circumstances, got poor sleep when so high. The exercise was enormous, and the life delectable, and each day we felt abundantly refreshed, and often got good *siestas* during the day, but at night it was unusual to sleep long and soundly.

I have lived under much the same conditions with tremendous daily exertions, but at lower altitudes, as in the Canadian woods, when the sleep was abundant and prolonged. This tendency to nervous exaltation must be gravely considered when sending patients into rarified air, for long and suitable directions should be always given, first by the one sending, and always to some competent physician familiar with local conditions.

This matter seems to me imperative. Again, when in the mountain country the tendency for all is to lose weight, at least at first, or at any rate, not to gain. Not so in the lower countries. If nutrition be distinctly below par it is rarely wise to go above one or two thousand feet till this matter improve. This loss of sleep and loss of weight must not be lost sight of.

Again, if fever be present, certainly above a point which local physicians understand, the upper and lighter airs seem, in my judgment, to kindle this more briskly. The continual protest of the many admirable physicians of Colorado is lifted up against the advent of unsuitable cases.

We exercise a grave responsibility in advising unsuitable cases to go here and there. It is, indeed, best to have some personal knowledge of health resorts, though much can be learned by reading, and such discussions as this.

I know I found the North African Coast, the Greek Islands, and the French and Italian Riviera very different in many important particulars from my thoughtful preconceptions.

While we have plenty of climates in the United States suited to special needs, we have no excuse to be ignorant of the salient characteristics and occasional variations. For instance, I've seen the whole of August in the Adirondacks so cold and wet that many who stayed there were hurt, and should have fled away, or better, should have been advised to go.

Dr. C. W. **BURR** read a paper on

LOCOMOTOR ATAXIA IN NEGROES. (See page 278.)

Dr. J. **MADISON TAYLOR.**—I can add my small modicum of testimony to that already adduced by Dr. Burr. There has been no case of locomotor ataxia in the negro at my clinic for nervous disease at the Howard Hospital. It would be interesting to investigate this point among the Indians.

The **PRESIDENT.**—I have seen no case of true tabes dorsalis in the negro, but I have seen a case of syphilis of the cord closely simulating ataxia. It came on comparatively soon after infection and entirely disappeared under specific treatment.

Dr. **JAMES HENDRIE LLOYD.**—While I have not seen true ataxia in the negro, I can recall two cases of multiple sclerosis in negroes. I do not understand why the negro should be exempt from ataxia while subject to other forms of degenerative disease of the cord.

Adjourned.

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MAY, 1892.

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THE
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Original Articles.

DISEASES AND CONDITIONS TO WHICH THE REST TREATMENT IS ADAPTED.[1]

By WHARTON SINKLER, M.D.,

Physician to the Philadelphia Hospital and Infirmary for Nervous Diseases, and Neurologist to the Philadelphia Hospital.

SINCE 1875,[2] when Dr. Weir Mitchell suggested the treatment of hysteria and neurasthenia by rest, seclusion and forced feeding, this method has become widely known, and has been employed to a greater or less extent in different parts of the world. In this country it is made use of by many physicians in general practice, and those of us who have made a specialty of nervous diseases find it almost indispensable in the management of certain cases. In England Dr. W. S. Playfair has used the rest treatment with great success in forms of nervous prostration connected with uterine diseases. Other physicians in England have used this plan, but, curiously enough, some of them have seemed to wish to deny Dr. Mitchell the credit of originality in the method. Dr. Ross, of Manchester, says that "Dr. Mitchell deserves credit for making use of several means conjointly, but he does not regard the plan as original, because the different means of procedure used in it have been employed separately." One might as well say that a new piece of machinery was not original because the iron, wood, and other materials entering into its construction had been used before to make other forms of machinery.

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[1] Read before the New York Neurological Society, March 1, 1892.

[2] American Clinical Lectures, vol. i., 1875.

Playfair published, in 1883, a little volume[3] containing reprints of several articles by his pen on rest treatment, which had already appeared in the *Lancet*. His success in carrying out this method has been most remarkable, and I shall refer to this work later. Other articles on this subject have appeared from time to time, notably those by Goodell in this country, and Brunton and Tibbets[4] in England.

As I was fortunate enough to be associated with Dr. Mitchell in the first case that he treated by his new plan, and had the opportunity of seeing most of his cases for several years after he began to use his "rest cure," it has occurred to me that it might be of interest to you if I detailed some of my experience in this treatment and pointed out the class of cases which I have found were most likely to be benefited by it.

It may be well to briefly review the essential features of the rest treatment. It consists mainly in absolute rest, over-feeding and passive exercise in the form of massage and electricity to promote assimilation, and isolation from relatives and friends in hysterical and neurasthenic patients.

In placing a patient under treatment, no matter for what disorder, she must be made to understand what the plan of treatment is, and that she must do what she can do to assist her physician in effecting a speedy result. Without the hearty co-operation of the patient, success will be difficult to obtain. First, she must make up her mind to give up herself to complete rest of body and mind as far as possible. Patients who are undergoing a course of this treatment merely to satisfy the desire of friends, and who have no strong motive for recovery, progress but slowly, and the first two or three weeks are likely to be trying to both physician and patient.

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[3] The Systematic Treatment of Nervous Prostration and Hysteria, by W. S. Playfair, M.D., 1883.

[4] Massage and Allied Methods of Treatment, London, 1888.

The degree of rest which should be enforced varies in different cases; but, as a rule, the patient is permitted to do but little for herself. She should remain in bed all of the time and should rise only to attend to the calls of nature; and sometimes even this is not allowed. Usually, the patient is rolled from the bed to a lounge or a cot once a day, to allow an airing of the bed and a change of linen. Apart from this she is not to be out of bed, or even to sit up in the bed. The nurse should do everything for the patient, giving the bath, making the necessary changes in clothing, etc.

Sometimes it will be found useful to make the nurse feed the patient for the first few days. At the beginning of the treatment the rest is irksome, but very soon the patient finds it comfortable and easy to endure. She may be allowed to feed herself lying on her side or propped up on a pillow. It is best not to allow her to sit up in bed, even while taking her meals; but after two or three weeks this may be done.

Isolation is an important part of the treatment; and not only should visitors be excluded, but no letters or messages from friends should be received. The smallest communication with the outside world is likely to make a patient become restless, and perhaps worried, about affairs at home. It is desirable to occupy the time of the patient with the routine of treatment as much as possible, and it will be found that with the hour for massage, the toilet hour, the visit of the doctor, the electricity, and the meals, that the day is well filled up.

One is often persuaded to relax the rule as to seclusion, and an occasional visitor is allowed to be seen, or perhaps a weekly letter from home is permitted. I have scarcely ever made an exception of this kind that I have not had reason to regret it. The weekly letter is looked forward to with eagerness, and generally something is found in it to arouse anxiety or cause dissatisfaction in the patient with her surroundings. It is rarely possible to treat patients in their own homes, even if they are isolated entirely; one cannot get the sense of separation from old associations which it is absolutely necessary to have in these cases. The moral effect of removal from home is an enormous help in the treatment in a case of neurasthenia or hysteria.

In Philadelphia we usually send patients for rest treatment to one of several good boarding-houses where no general boarders are taken. At these houses there is no difficulty about having meals sent to the rooms, and good milk and soups are supplied without extra charge. Small boarding-houses are preferable, because the grouping together of a number of patients of this kind is sure to lead to difficulties. As soon as a patient is sufficiently convalescent it is best to send her away with her nurse to the sea shore, or some quiet country place, with a written schedule for the next few weeks.

Massage is an essential feature in the treatment. It should not be given by the nurse, even if she is thoroughly skilled in its application; for unless a masseuse is in constant practice by treating several patients daily, she cannot do good work. Moreover, it is necessary that the nurse should have at least an hour daily for exercise and fresh air, and the time of the masseuse's visit gives her an opportunity to get her outing.

The length of time for the application of the massage should be about an hour; but few patients can bear it as long as this at first. We must begin with from twenty minutes to a half hour, and use light surface rubbing. The duration of the treatment and the amount of force employed should be gradually increased until a full hour of massage is given daily. Sometimes it is well to give a short rubbing a second time in the day, and the nurse can readily do this.

For the first few days the masseuse should confine her attention to the limbs and back, but later the abdomen should be thoroughly rubbed and kneaded. The patient is often wearied by the treatment, but, as a rule, there is a pleasant sense of fatigue, which is followed by refreshing sleep. It is always a favorable indication for a patient to sleep after massage. It should be borne in mind that one of the objects of massage is to produce tissue waste in order to admit of a larger amount of food being assimilated, and it will often be found that if the patient is not consuming and digesting a sufficiently large quantity of food that the massage is not being given in an effectual manner.

The masseuse should be a healthy, cheerful woman, but must not be given to gossip or too much conversation. She should understand that massage is a purely mechanical means of treatment; and a masseuse who believes that there is more or less magnetism in her method is one to be avoided.

Properly applied, massage is followed by a rise of temperature of from one-fifth to four-fifths of a degree, and patients who suffer from cold extremities usually find their feet and hands warm for some hours after their treatment. Occasionly, however, one meets with a person in whom after the first few treatments there is a lowering of the temperature and a sense of chilliness and depression. In these cases the massage should be very gentle and of short duration, and gradually increased. The massage of the abdomen is very important, and thorough and careful kneading over the intestines is useful in relieving constipation. In those cases in which there is tenderness in the ovarian region the application of kneading is at first painful, and the patient shrinks from it very much; but a tactful and judicious masseuse is soon able to give deep kneading in this region, and with this the tenderness and hyperæsthesia disappear to a great extent.

Massage should not be given immediately before or immediately after a meal, but an hour after or an hour before eating is a very good time for its application. If more than a couple of hours have elapsed since a meal, it is well to give the patient a glass of milk just before the rubbing.

Electricity is valuable as another means of passive muscular exercise. The faradic current should be used once daily for from a half to three-quarters of an hour. In applying electricity to the muscles, the slowly interrupted faradic current should be used. The electrodes should be covered with well-wetted sponges or absorbent cotton, and placed over the belly of the muscle, covering successively, as far as possible, its whole surface. Each muscle should be made to contract four or five times. All of the muscles of the body should be treated in this way; and after the muscular faradisation it is well to use general faradisation by the rapidly interrupted current for ten or fifteen minutes, placing one electrode on the nape of the neck and the other on the sole of each foot alternately.

By this method of exercise there is a marked degree of muscular waste produced, as is shown by the rise in temperature following the application. I have seen a rise in temperature of fully a degree after three-quarters of an hour of faradisation. There is undoubtedly something more in electricity than the mechanical effect. It acts as a tonic to the muscular and nervous system. The diet is of great consequence in the treatment. In some cases it is necessary to begin with a diet of milk alone. Patients who have feeble digestion, or who have suffered for months from various forms of dyspepsia, require a strict milk diet for a few days. Sometimes it is necessary to begin with two ounces of milk every hour or two and gradually increase the amount until two quarts a day are taken; then a mixed diet can be given.

In some cases if there has not been much dyspepsia the milk diet may be dispensed with; but the addition of milk to the treatment is almost essential. On first waking in the morning the patient should take a cup of cocoa or hot milk; after this the toilet is made by the nurse. This consists in a sponge bath, rapidly and carefully given so as to avoid chilling or undue fatigue, change of linen, etc. Following this is breakfast. Dinner should be given in the middle of the day—say about two o'clock—and midway between breakfast and dinner a glass of milk should be given. Milk again at four o'clock; supper at half-past six, and toilet for the night at nine o'clock. Beef peptonoids, or peptonized soup, may be given in place of milk once or twice during the day.

When possible, it is useful to weigh the patient once a week, so that the gain or loss of flesh may be noted and the food regulated accordingly. Playfair says that whenever he notices that his patient is not gaining flesh as rapidly as she should, that he usually finds that the massage has not been given in a sufficiently effective manner to allow of a large quantity of food being taken.

The length of time that the treatment should be carried on varies, of course, in different cases. As a rule, at the end of six weeks the patient is allowed to begin to sit up. At first she may sit up for fifteen or twenty minutes each day, the length of time being gradually increased. After a few days she begins to walk about; and as soon as she is sitting up for two or three hours twice a day, she may take a daily walk or a drive.

A matter of the greatest importance in the treatment of these cases is the selection of a nurse. A nurse to successfully manage a case of rest treatment requires special qualifications. A young woman is usually preferable, and good health and good temper are equally essential. A nurse should be well trained, and a good education is necessary to make her an acceptable companion to a person in whose society she is shut up for several weeks. It is often difficult to combine in a nurse the requisite degree of firmness and at the same time gentleness. Too much positiveness is as objectionable as too much sympathy.

Many patients think they cannot take milk; but by beginning it in very small quantities and gradually increasing the amount, almost every one can be made to digest it. Occasionally, it is necessary to peptonize the milk; or by the addition of equal parts of Vichy water it is made more digestible. Sometimes a small amount of Mellin's Food adds to the nutritive properties of the milk. In anæmic cases iron is given freely. Blaud's pill is an excellent form in which to give it; and sometimes it is convenient to administer the pyrophosphate of iron in liquid extract of malt to patients who object to taking drugs.

The gain in flesh is often remarkable. I recollect one patient who was under my care, who had reached an extreme degree of emaciation from a persistent gastric catarrh, together with hysterical vomiting. Her stomach rejected all food and could not retain more than a tablespoonful of liquid at a time. Although she was of medium height, her weight was but sixty-three pounds. At the end of her treatment she weighed one hundred and twenty pounds. Another anæmic and neurasthenic patient of mine gained at the rate of a half pound daily for four or five weeks. One of Playfair's cases showed the remarkable increase in weight of forty-three pounds in six weeks. Sometimes after three or four weeks of forced feeding the patient suffers from surfeit, and under these circumstances it is best to administer a calomel purge and prescribe milk diet for a day or two; after this we may return to full feeding.

The following is one of those cases of hystero-epilepsy with chronic gastric trouble and general break-down which it is impossible to treat with any degree of success at home:

Miss A. came under my care in December, 1889. She was exceedingly sallow, much emaciated, and was feeble and excessively nervous. She was twenty-two years of age, and gave the following history:

She had never been strong after her twelfth year, having suffered constantly from dyspepsia, in consequence of which she had been compelled to leave school. When twenty-one years of age she began to have violent nervous attacks, attended with convulsions. These attacks were repeated at shorter intervals until they occurred daily. For the relief of these convulsive attacks, both ovaries and tubes were removed. For a few months she was free from the seizures, but then began to have them again. A year later the dyspeptic symptoms became troublesome, and the stomach would retain little or no nourishment. Various means were resorted to, including rectal alimentation. Her doctor wrote me that he had tried every form of food in vain, and especially impressed upon me the fact that the patient could not take milk under any circumstances.

The convulsions were of the most violent character. It required several persons to hold her on the bed during the attack, and it seemed as if there was danger of her injuring herself by her violent tossings. I admitted her to a private room at the Infirmary for Nervous Diseases, and ordered peptonized milk in small quantities at short intervals. Rigid isolation was insisted upon, and massage and electricity were given daily. After a little while the milk was retained, and in a short time she began to take full quantities of non-peptonized milk, and after a few weeks returned to solid food. In less than four months her weight had increased from ninety to one hundred and twenty-five pounds, and she was perfectly free from the attacks of hystero-epilepsy. I have recently seen her, and she continues in excellent health and has retained her flesh.

Dr. Weir Mitchell tells me that he has recently been using to a considerable extent what he considers a valuable addition to the rest treatment, namely, what he calls a partial rest schedule. This is useful in cases of neurasthenia which are not extreme, or in business men who are unable to spare the time for the rest treatment, or in some women who, although suffering from neurasthenia, cannot entirely give up their family duties. I have made use of this form of rest treatment with success. The plan is briefly as follows:

On awaking in the morning the patient is to take a cup of cocoa, after which she is to rest for twenty minutes. She is then to get out of bed and sponge herself, or be sponged by an attendant, with cool water; after which to be rubbed dry with a coarse towel. Then dress leisurely and lie down for twenty minutes before breakfast; after which meal she is to lie down for an hour and rest absolutely. Massage should be given at ten or eleven o'clock in the morning, and this is followed by an hour of rest. Then take a glass of milk or a cupful of strong soup; but the milk is preferable. The patient may then go about and attend to any duties until luncheon; and after this meal rest is also to be taken. During the afternoon the patient may walk or drive and attend to business matters; but she should not exercise more than she can possibly help. If electricity is used, it is best given just before the evening meal, or at bedtime. The fluid extract of malt may be given with advantage just before each meal. The rest after meals is an important feature, and the patient should retire to bed at an early hour.

Hysteria and neurasthenia are the diseases to which the rest treatment has been most extensively applied, and it is these conditions which have given the most satisfactory results. In hysteria, separation from friends and a rigorous application of moral influences are often sufficient to effect a cure, and many cases have been restored to health and usefulness by these means from time immemorial; but, as a rule, this is not enough. Something more is needed than the effect of isolation and discipline. As Playfair says: "Few cases of hysteria are preached into health." A hysterical patient is usually broken down physically, emaciated, feeble in muscular power, in circulation and powers of digestion. She is unable to do anything but lie in bed, or is carried about from place to place. The building-up of the physical forces by means of massage, forced feeding and a careful regimen, enables her to regain the will-power that had been lost. Without the improvement in the physical condition, it is impossible for her to regain the will-power or to retain it.

Hysterical patients who are plump and well nourished do not give as brilliant results as others. They require more moral influence and less complete rest. The massage should be given vigorously, and combined with it should be the Swedish movements. The diet should be carefully regulated to suit the conditions of the case, and but little milk or fluid is permissible. Indeed, in some of these cases it is necessary to reduce the flesh first before any benefit from the treatment can be obtained.

Some of the organic diseases of the cord are benefited by the rest treatment. Since Hilton's famous lecture on "Rest in Pain and Disease," the advantages of rest in bone and joint diseases have attracted more attention than ever before. The benefit of rest in Pott's disease is well known to all of us, and many excellent recoveries have followed this plan of treatment. The combination of massage and some passive movements, with rest in joint disease, has proved sometimes more advantageous than simple fixation of the joint.

Spitzka insists on absolute rest in acute myelitis. He says: "The more thoroughly the patients obey the injunction to attempt no motion, the better the results will be."[5]

Locomotor Ataxia.—In locomotor ataxia much good has followed prolonged rest. Mitchell reports[6] the case of a patient suffering from locomotor ataxia, who sustained an injury to the knee which confined him to bed for two months. Soon after getting about he fell and fractured his thigh; this injury kept him in bed for three months longer. On getting up, his tabetic pains had entirely ceased; and although not cured of his other ataxic symptoms, they were greatly mitigated.

Hammond also relates a case of a patient who visited his office to consult him for ataxia. Upon leaving the house this gentleman fell on the pavement, breaking his leg. This confined him to bed for several weeks, and when Dr. Hammond saw him at the end of this time, there was no evidence of ataxia.

The systematic use of rest, combined with massage, certainly benefits tabetic patients. It is difficult, however, to get them to submit to a complete course of treatment;

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[5] System of Medicine, vol. v., p. 811.

[6] American Clinical Lectures, vol. i., 1875.

but even when they will not go to bed for a length of time, a course of partial rest treatment does good. The employment of massage and rest in bed for three or four hours a day relieves the ataxic pains and benefits the condition of the patient generally.

Spastic Paraplegia.—I have seen some cases of spastic paraplegia helped by rest, with massage, etc. Every one knows that excessive exercise makes the locomotion in these cases worse; and prolonged rest, with only passive movement, has been found to relieve to some extent the stiffness of the muscles. Extreme stretching of the contractured muscles, as suggested by Mitchell, occasionally relieves the rigidity to a remarkable degree.

Neuralgias and Neuritis.—In peripheral nerve troubles, as illustrated by sciatica, multiple neuritis, etc., the rest treatment is of great value.

Mitchell has recently written[1] fully on the treatment of sciatica by rest and cold. Græme Hammond has also recommended this plan of treatment in the same disease. I have seen many cases of inveterate sciatica treated at the Infirmary for Nervous Diseases by means of absolute rest of the limb. Sometimes doing no more than keeping the whole thigh and leg at rest by the application of the long external splint will effect a cure. Other neuralgias are successfully treated by rest of the part; indeed, any acute neuritis is best managed by keeping the nerve free from movement.

Miles says that in the treatment of neuritis "absolute repose of the affected part in the position of greatest relaxation and rest is to be scrupulously enforced."[2] Migraine is benefited by a course of rest treatment. Cases often yield to remedies after a course of this treatment which were valueless before it.

Mental Diseases.—Certain forms of brain troubles dependent upon mal-nutrition, as illustrated by melancholia and the insanities of exhaustion, are wonderfully helped by a judicious course of rest treatment. Of course, the physician is to exercise much discretion as to the amount of rest a patient can bear. Some of these cases must have open air exercise; but in many cases of melancholia the mental disorder depends upon malnutrition, anæmia, and physical debility, that any plan of treatment which supplies flesh and blood for the patient aids in restoring the mental health. Many a woman who is thin and anæmic to the last degree from over-lactation is in a profound state of melancholia. If she is removed from the cares of home and the undue attentions of too kind friends, placed at absolute rest, given massage, abundant food, etc., the rapidity of the cure is wonderful.

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[1] International Clinics, October, 1891.

[2] System of Medicine. Pepper. Vol. v, p 1154.

Cowles[9] speaks of the value of the rest treatment in the nervous exhaustion of melancholia and mania; and Clouston,[10] who does not seem to have known of the rest treatment, speaks of diet and regimen as being of the utmost importance in melancholia. "Such patients," he says, "cannot fatten too soon or too fast; though their stomachs and bowels may be overloaded and their livers and kidneys may be too engorged." If we combine overfeeding with passive muscular exercise, by means of massage and electricity, the overloading of the stomachs and bowels and the engorgement of the livers and kidneys will be avoided. Clouston says: "In many cases milk is his sheet-anchor." He has given as much as sixteen glasses a day and with surprising benefit. "The nervous diathesis," he asserts, "does not put on fat naturally, therefore we must combat the tendency to innutrition by scientific diet." Had he known of the rest treatment he would have found this an easy way to make his patients put on fat. Folsom speaks of the benefit of the rest cure in melancholia, especially in elderly persons.[11] Taylor also refers to the value of this treatment in some cases of mental depression.[12]

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[9] Neurasthenia and its Mental Symptoms, Boston, 1891.

[10] Mental Diseases, p. 117.

[11] System of Medicine, vol. v., p. 160.

Chorea and Epilepsy.—Some functional nervous disorders which are not dependent upon hysteria are treated with great success by rest and seclusion. Take, for example, chorea. In some cases of this disease we are compelled to keep the patient in bed, because the movements are so excessive that he cannot be up. If, in addition to rest in bed, the patient is completely isolated and the other details of the rest treatment carried out, recovery takes place speedily. Van Bibber has recommended placing the patient in bed in a dark room, but I have never tried this plan.

An extreme case of acute chorea was admitted by me to the Infirmary for Nervous Diseases a few months ago. A girl of fourteen became violently choreic, after a fright. She could not sit on a chair without falling off, nor could she keep still for an instant. The movements were so general and violent that she was covered with bruises from injuries received by striking herself against objects. She was utterly unable to talk, and feeding her was accomplished with great difficulty. She was put in bed in a room with no one but the nurse. It was necessary to put padded bars around the bed to keep her from being thrown out by the movements. Sleep was impossible, and chloral had to be given in pretty large doses for the first two or three nights. Massage was applied daily, and as much liquid nourishment as possible was given. In three or four days the movements were subdued, and in six weeks the patient was discharged well.

I have seen epilepsy benefited by the rest treatment, but, of course, no permanent relief has resulted. A girl of sixteen came under my care last summer, with frequent epileptic attacks. I had her kept in bed and given massage and electricity daily, and kept as quiet as possible, allowing no visitors. She remained in bed for six weeks, and during this time had but two attacks.

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[12] On the Management of Mental Depression. University Medical Magazine, August, 1891.

Alcoholism and Opium Habit.—Cases of opium habit and alcoholism are successfully treated by this plan. Many patients with morphia habit are thin and anæmic, their nutrition is bad and their digestive organs are greatly disturbed. The advantages of the rest treatment in these cases are many. First, we are enabled by careful diet and regimen to restore the powers of assimilation of food to a normal condition. The tissues are renewed, the brain and nervous system become better nourished, and the patient is then better able to contend against the craving for the drug upon which he has so long been dependent.

This systematic treatment occupies a large amount of the patient's time, so that he is diverted and has less time to think about his accustomed stimulant. The extreme restlessness which often accompanies the withdrawal of opium in these cases is allayed by the application of massage and electricity, and the exhaustion and collapse which sometimes occur on the complete withdrawal of morphia, when a patient has been taking large quantities, is prevented, or at any rate lessened in degree, by the means employed in the rest treatment.

In the treatment of the morphia habit we may give gentle massage two or three times a day, and at night a hot bath or the drip-sheet helps to bring sleep.

Uterine Diseases.—In various forms of uterine and ovarian disease the rest treatment has proved of the greatest value in the hands of Playfair, Goodell and other gynæcologists. In his "Lessons in Gynæcology," Goodell gives a chapter on the "nerve counterfeits of uterine disease," and describes graphically the treatment of many cases of uterine and ovarian disease, not by local treatment or by operation, but by the rest treatment. A great number of women are spayed for ovaritis and other diseases of the appendages which might have been cured by the use of the rest treatment. In a paper on the remote effects of the removal of the ovaries and tubes,[13] I have referred to several cases who had been advised to have the entire appendages removed as a last resort, but who regained their health by a course of rest treatment without operation. Many cases in whom operative interference is unavoidable do not regain their physical and nervous health until some systematic plan of treatment has been carried out.

Goodell says that "when we find a train of hysterical symptoms associated with a diseased or a displaced womb, we jump with double energy to the conclusion that the uterine lesion is not a symptom, or a sequence, or a coincidence, but a factor, and at once proceed to treat it accordingly." He gives many instances of women brought to him for uterine treatment whom he has cured without it by rest treatment. Many of the cases which he has seen restored to health by this means still had some displacement or disorder of the uterus, which did not interfere with their enjoying reasonably good health. He relates the case of a patient who came to him with a strongly retroflexed womb, enlarged and sensitive, who, without local treatment, but by means of the rest cure alone, gained forty pounds in five months, and was able to do her own work, although she still had the uterine displacement.

Another case he describes in which there was prolapse of both ovaries and coccygodynia which was cured by rest. Still another case of retroversion and prolapsed ovaries is reported by him as "wholly relieved of the ovaralgia, menorrhagia, and other sexual symptoms which had for years embittered the patient's existence."

Goodell believes among other benefits from the rest treatment by massage and electricity that the blood is diverted from the congested organs, and this relieves their diseased condition. He concludes by saying that what he claims for the rest treatment is, that it has in his hands "cured granular erosions, menorrhagia, intermenstrual ovaralgia, prolapsed ovaries, coccygodynia, and most of the diseases arising from passive congestions."

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[13] Transactions of the Association of American Physicians, vol. vi., p. 86.

Albuminuria and Lithæmia.—Some interesting results have been obtained in the treatment of certain forms of Bright's disease by rest, massage, and regimen. Several years ago Dr. W. W. Keen made some interesting observations on the relation of exercise to albuminuria.[12] In a patient who consulted him, he found that there was albuminuria, and that the amount of albumen varied from three to fifteen per cent., and was largely dependent upon exercise. This he tested in the folowing way: He put his patient to bed for three days and tested the urine passed at different times in the twenty-four hours. No albumen was found. Immediately after the last examination the patient dressed, and walked a measured mile; on returning, he passed water, which contained about five per cent. of albumen. On resuming rest, the albumen again disappeared. After a few days massage was applied thoroughly for forty or fifty minutes. The urine immediately before and after massage was free from albumen. Dr. Keen thought that this case was an illustration of the value of massage as a means of passive exercise without deleterious effects through nervous exhaustion, and expressed his belief that massage stimulates muscular tissues and promotes its nutrition without such changes of blood pressure and vasamotor tonus in the muscular coat of the vessels as induced the curious albuminuria after voluntary exercise above quoted.

Mitchell has been in the habit for years of treating cases of Bright's disease by more or less complete rest and passive exercise, combined with skimmed milk diet, and has had very successful results by these means.

The relation of lithæmia to nervous diseases has attracted much attention of late years, and the writings of Haig on this subject have been most instructive. Many forms of nervous troubles, for example, migraine and some neuralgias and certain forms of neurasthenia, are dependent on the lithæmic diathesis. The best method of eliminating uric acid, we all know, is by exercise and diet, with an abundance of diluent drink. The rest treatment is particularly well adapted to the management of these cases. Vigorous massage and the thoroughly regulated diet which can be maintained, enable the system to eliminate the uric acid and relieve the nervous symptoms which arise from the retention of the same. A skimmed-milk diet, in addition to the massage and rest, is of importance in many of these cases, although all do not require it.

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[12] Medical News, vol. 46, p. 217, 1855.

Grave's disease is much benefited by rest treatment. Absolute rest has been known, for many years, to be the most effective means of quieting the heart's action in this disease; but if we add to the rest, isolation and passive exercise, the benefit of it is enhanced.

TREATMENT OF A CASE OF PARAMYOCLONUS MULTIPLEX.

Dr. Salvatore Bacci describes in the "Bulletino delle Scienze medicle di Bologna," January, 1892, a typical case of paramyoclonus multiplex. The treatment at first was by galvanism—so highly lauded in these affections. The writer was obliged to abandon it, because twice after the use of a weak current the muscular spasms of the lower extremities increased in intensity. The administration of alcohol gave excellent results for the time being. For the next ten days antipyrin was given in two-grain doses daily; then little by little the dose was diminished, until the twentieth day, when it was suspended altogether. An arsenic treatment was then undertaken (preparation and dose not stated) with the most gratifying results. In a short time he returned to his work completely cured (May, 1891), and at the present writing (January, 1892) he is in perfect health and attends to his duties with the same energy as before. W. C. K.

REPHINING FOR PARALYSIS OF THE THIRD NERVE.

BY W. B. FLETCHER, M.D.,

Indianapolis, Ind.

OCTOBER, 1889, Michael Griffin, aged 38, a blacksmith in R. R. shops, was injured, a hammer flying off the handle in the hands of one of his elpers; the hammer weighed three pounds, the distance rojected about four feet. The blow was received about e centre of the right half of the frontal bone.

The immediate result of the blow was to cause falling on the face and unconsciousness for half an hour. The an returned to work in a few days, but he was obliged give up. He was sent to St. Vincent's Hospital under arge of the company's surgeon, where he remained a w weeks, suffering intense pain in frontal region; the ght eye began to bulge outward, the lid could no longer e uplifted, and delusions of sight and hearing rendered im mildly insane, of melancholic type.

During the following February, 1890, he applied to r. J. L. Thompson, the well-known oculist, for advice. r. T., recognizing complete paralysis of the third nerve esulting from traumatism, and seeing the man's pitiful ental condition, sent him to me. I advised trephining r exploration, as a last resort, and on April 3, 1890, e operation was performed. My desire was to enter e brain on a level with the base of the right frontal be where it rests on the orbital plate.

An incision was made over the centre of the frontal one, drawn down to the glabella, thence through the row to the patient's right. This triangular flap being fted, a one-inch trephine was used, the lower and outer dge of the saw resting on the supercillary notch.

When the button was removed which opened up the ontal sinus, there was a decided odor of ozæna, and the hole mucous membrane was of greenish-blue color. ontinuing with a half-inch trephine through the posterior wall of the sinus, the lower edge of the opening as just on a level with the orbital plate; the dura was slit transversely and lifted, showing a fracture line in the plate. There were evidences of thickening of the dura with slight exudation of jelly-like plasma under it. A probe was passed two and a half inches along the surface of the plate in the line of fracture without finding any loose, which I expected would be the anterior clinoid process or near it. The brain did not appear unnatural in color or in motion. No evidence of tumor or abscess presented; but, to make sure, I passed a three and a half inch aspirating needle upward through the first convolution, about the coronal suture; then lower down and outward through the second (pointing to centre of the temporal bone). Another thrust of the needle through the third convolution, on a plane half inch above the orbital plate, but neither pus nor bone spicula was found. After washing thoroughly, made a free opening at the inner and lower angle of the sinus, or rather enlarged the natural one, giving a free drainage through the nose. I did not replace the button of bone—I never do where it is so small—but closed the flap down, holding it with three interrupted sutures in the brow and adhesive plaster across the forehead; then, with compress and bandage, hermetically sealing the opening.

The patient took less than one fluid drachm of chloroform, and that just before the incision was made. While arresting the hemorrhage and applying cocaine to the edges of the flap, he asked me not to give him any more chloroform. During the remainder of the operation he talked to me, feeling no pain during the trephining; but in scraping the diseased membrane of the sinus there were painful sensations to the teeth and forehead (from the branches of the fifth) and stinging sensation in the nose. The passage of the aspirating needle into the convolutions of the frontal lobe caused no sensation, except the second thrust, the needle (being three and a quarter inches, pointing to the centre of the temporal bone) caused sensations of twitching of the fingers on the left hand.

The patient sat up the following, and was able to go to his home the third day; for ten or twelve days a profuse discharge of mucus and blood came from the nose.

The patient lost at once the intense headache that made him walk the floor almost constantly and prevented sleep, except when taking large doses of morphia. His nelancholy departed during the operation; he became even cheerful and jocose at the final stitch. His eyeball esumed its normal place in the orbit, and in a week ould be moved inward. In three months I sent him to he oculist, who wrote me the following note:

INDIANAPOLIS, August 3, 1890.

V. B. FLETCHER, M.D.

Dear Doctor:—I have just now most thoroughly examined Michael riffin, whom you trephined some weeks ago for paralysis of the third air of nerves. I am really astonished at the result. When I examined im before the operation he had all of the symptoms of complete paraytic ptosis; the eye turned out, down, and was more protruded than he other, and had a largely dilated pupil. His vision at that time was $\frac{20}{.c.}$, and he had much heavy distress on that side of the head. Now his pper lid moves as easily as the other, and the eyeball moves readily in very direction. The pupil, however, is just the least particle larger than he left eye and does not respond to light as readily quite as the left—$.=\frac{10}{c.c.}$ right; $\frac{20}{xxx}$ left. I notice that the right optic disc is whiter han the left, and there are not so many nutrient vessels on it, which hows the effect of the long-continued pressure upon it.

When I say that I am astonished at the result, I mean that I could ardly have expected such a result from the operation of trephining, as feared that one could not reach far enough into the brain by operative rocedure to effect anything in the region of the origen of the third air. The operation was remarkable. J. L. THOMPSON.

It is now nearly two years since the operation, and he patient is as well as ever; there is no mark by which ne could detect an operation had been performed.

I am induced to publish this case because I find no ther instances of trephining for paralysis of the third erve. My exploratory opening showed what I did not nticipate, viz., diseased sinus. I found a fracture, and esults of exudation and inflammation, but neither dead one or abscess. Just what took the pressure or irritation off the nerve I do not know. If the sinus was diseased from the blow, or the paralysis of the third nerve resulted from the diseased sinus, one cannot tell. These matters are at least food for thought, particularly to the phthalmologist and alienist.

297 N. Penn Street.

FRACTURE OF THE BASE OF THE SKULL WITH THE ESCAPE OF THE CEREBRO-SPINAL FLUID, FOLLOWED BY FACIAL PARALYSIS AND RECOVERY.

By JOSEPH COLLINS, M.D.,
New York.

UNFORTUNATELY fractures of the skull, whether of the base or the vault, are not uncommon, and the results as regards treatment and recovery are most unpromising. Although there is nothing novel about reporting a case of recovery, the following patient presented some symptoms and collateral developments which are of interest to the neurologist. Besides the patient suffered, undoubtedly, from fracture of the base of the skull without presenting some of those symptoms which we are accustomed to associate with that injury.

The patient, a clergyman, forty-nine years of age, was thrown from an Arabian saddle, while riding rapidly in the Orient, on February 24, 1890. He struck heavily on the right side of his head, causing no wound, however, except a superficial scratch from which a few drops of blood oozed; a large contusion over the left thigh indicated where he had been forcibly thrown against the high wooden back of the saddle. The rider had freed his feet from the stirrups when the horse began to run, so he was not dragged for any great length. He did not lose consciousness, even momentarily, as he remembers having been picked up by two companions. At the moment when the upright posture was assumed, a most undescribable sensation of revolution was manifest, a rapid continual substitution of the heels and head running like a wheel. This lasted but a few seconds. He begged to be laid down flat on the ground, and then began to vomit, which was followed, at its cessation, by a very copious discharge from the bowels. In a short time he was placed on another horse and carried to Tiberius, and while on this journey he felt something flowing from the left ear, which he thought at first was blood, but which proved on examination to be a pale, colorless fluid, sufficient in quantity to saturate two or three handkerchiefs; this discharge continued during the night, saturating the pillow-slip and pillow of the hospital bed. At this time he had no particular symptoms except headache and pain from the hip. Two days afterward, the dripping from the ear having ceased, he left Tiberius on a stretcher, laid across the backs of two mules, for an eight-hours' journey to Nazareth. The unevenness of the mules' steps on a more uneven road caused him a considerable jarring, which was followed by a transitory headache and vertigo.

On the second of March—that is to say, six days after the injury—he began to notice that the left angle of the mouth was drawn downward and the right apparently raised, the right eye open and inability to close it completely, in fact all the symptoms of facial paralysis associated with a partial loss of taste. The symptoms which he then complained of were principally dizziness, especially when attempting to turn around, or in raising or in stooping suddenly. Associated with this was a considerable unsteadiness in walking, a feeling of thickness, cloudiness, and heaviness in the head, and a sensation of pressure and tightness in and around the cranium. These symptoms became less severe as they were remote from the accident. He also noticed at this time a difficulty of hearing in the right ear.

The treatment at this time consisted principally in the administration of the iodide and bromide of potassium. By slow stages the patient journeyed to Venice, reaching there in May. An examination of the right ear at this time showed a slight opacity of the tympanic membrane and a remarkable cicatrix in the postero-inferior quadrant of the drum. The watch could not be heard unless placed in contact with the ear, and Galton's whistle at a distance of four inches. No response to whispering. The tuning-fork gave increased response, showing, of course, that the mischief was in the nervous mechanism and not in the bone-conducting apparatus. The facial palsy began to disappear about three weeks after its advent and had by this time completely disappeared.

After a few months the patient returned to this country, the subjective symptoms continuing to ameliorate, the objective remaining the same. An examination of the ear, eye, and special senses at this time showed them to be apparently normal, with the exception of those related, referable to the right ear. In the latter part of January of the present year, when all his symptoms had disappeared with the exception of a feeling as if a fairy film of gauze was spread over the interior of his skull-cap, which, however, gave him no particular uneasiness, he had a sort of a relapse in his symptoms after having jumped a few steps off a stairs. The vertiginous and symptoms of unsteadiness returned, but they disappeared in the course of a few weeks, and he is now apparently restored to health.

It will be seen that the conditions on which the diagnosis of fracture of the base of the skull was based, were the history of the injury, the escape of the cerebro-spinal fluid, the developing facial paralysis, and the rupture and resulting cicatrix in the tympanum. It is unnecessary to state here the symptoms of fracture of the base of the skull, whether they involve the anterior, middle or posterior fossa. The writings on this subject are both extensive and familiar. Fractures of the middle fossa are undoubtedly most frequent and probably associated with the best marked symptoms. Of these symptoms, bleeding from the ear has long been considered the one to which most diagnostic weight should be attached. And this is probably rightly so; but care should be taken in estimating its weight as a diagnostic factor; for it is very possible that in many cases of injury to the cranium, attended with hemorrhage, this source of bleeding is from the rupture of the blood-vessels in the membrana flaccida, or Schrapnell's membrane, as it is sometimes called. Unquestionably, the line of fracture may involve the floor of the tympanic cavity, which is formed by a thin plate of bone roofing in the jugular fossa, and separating it from the internal jugular vein and the internal carotid artery. Therefore it becomes a matter of importance to know how much blood has escaped and for how long a time the hemorrhage has continued, and also, perhaps, a fact of some magnitude would be in determining whether it is arterial or venous blood; for if a large quantity of fresh dark-colored blood is discharged, it is almost a certainty that the blood comes from the internal jugular vein. On the other hand, if it is large in amount, continuous, and light-colored, it probably comes from the internal carotid, although such a severe hemorrhage may possiby come from the blood-vessels in the tympanum.

In the case above described there was absolutely no hemorrhage from the ear, and this, one would judge from a review of the reported cases, was an exceptional condition, in cases where the other symptoms were well marked; however, Buck in his article on "Ear Diseases," in the International Encyclopædia of Surgery, in speaking of fracture of the base, unhesitatingly says: "I am satisfied, from examinations which I have made in cases of injury to the head of recent occurrence, that fracture of the temporal bone often occurs without the slightest bleeding from the external auditory canal." And the history of this case would tend to confirm that statement.

Erichsen says that copious hemorrhage from the ear to the extent of many ounces has been known to occur from a fracture of the anterior and inferior part of the meatus auditorius externus, in consequence of the condyle of the lower jaw having been forcibly driven up against it, the jaw itself having been fractured. And Battle in a recent article in the *Lancet* described a case which showed a peculiar association of fractures, viz., fracture of the bony wall of the external meatus and also a fracture of the petrous part of the temporal bone without being associated with rupture of the membrani tympani, so that although fracture of the posterior and middle fossa of the skull was properly diagnosed, the fracture in the latter position was supposed to be indicated by the bleeding from the ear, which in reality came only from the external meatus. Sir Prescott Hewitt, on the other hand, considers that bleeding from the ears in severe injuries of the head has, for many years past, been held, and with good grounds, to be one of the most valuable signs of fracture of the base. But this bleeding, to be of any value, must continue for some time and be of a serious nature. That this is partly true no one will question; but the fact that such injuries may occur without hemorrhage, and also with long-continued bleeding, having its origin other than from the large vascular channels about the middle ear, is incontrovertible.

The escape of the watery fluid from the ear in this case was in all probability the cerebro-spinal fluid, and the time and manner in which it came on was rather characteristic than otherwise; that is to say, the watery discharge resulting from this injury comes on more often shortly after the receipt of the fracture, than directly, and frequently when the patient is moved or jarred. When the appearance of a watery discharge is delayed for more than twenty-four hours following injury to the side of the head, it is important to discover whether or not the fluid results from laceration of the mucous membrane of the ear, with a co-existing rupture of the drum, and followed by inflammation, which inflammation is characterized by the production and escape of a serous liquid very much resembling the cerebro-spinal fluid physically, but differing from it chemically in so much as it has a greater quantity of albumen and saline matters. However, in cases with the appearance of a fluid, before sufficient time has elapsed for inflammatory phenomena to set in, and in fact ceasing, although profuse in amount, within a shorter time than it takes inflammation to throw out a serous fluid, this associated with after-developing facial paralysis, is the best corroborative evidence that the discharge is the cerebro-spinal fluid. This fluid may sometimes be discharged from the nose and the eyes, but this is comparatively rare, and when from the latter it is more indicative of fracture of the anterior fossa, as is also subconjunctival extravasation.

The ridge of the aqueductus Fallopii containing the facial and auditory nerves is situated on the inner wall of the tympanic cavity, and the fracture in this case probably involved that and perhaps extending down to the internal auditory meatus. The time elapsing between the receipt of the injury and the appearance of the paralysis was, perhaps, somewhat longer than ordinary, and taken in conjunction with the duration of this symptom, would show that the paralysis was partly dependent on the surrounding inflammation necessarily resulting from such an injury, without being associated with serious disorganization in the nerve itself.

The explanation of the partial loss of the sense of taste is somewhat more difficult and largely theoretical. But most likely it must be solved through the agency of the chorda tympani nerve. This nerve is usually said to be given off from the facial in the aqueductus Fallopii as it passes directly downward at the posterior part of the tympanum, then passing from below upward in a distinct canal parallel to the aqueductus Fallopii and enters the cavity of the tympanum. It afterward emerges through the canal of Huguier and meets the gustatory division of the inferior maxillary nerve between the two pterygoid muscles and afterward proceeds to the submaxillary gland. By means of this communication in all probability is to be explained the disturbance noted in the functions of the gustatory nerve. And this becomes much more apparent if we believe, indeed, that the lingual branch of the fifth nerve gives off the chorda tympani and that most of the fibres of the chorda tympani pass into the petrosal and thus reach the spheno-palatine ganglion and second part of the fifth nerve—these fibres conducting taste impressions from the front of the tongue. The gangliform enlargement on the seventh also receives a very small connection by means of the small petrosal, which connects the Otic ganglion through Jacobson's nerve with the glosso-pharyngeal. Certainly if there was a disturbance of function in the chorda tympani symptoms referable to its influence on the secretion of the submaxillary gland would be manifest, as this nerve contains both vaso-dilator and true secretory fibres. But outside of the dribbling of the saliva associated with the facial paralysis, the patient noticed no particular symptoms.

The circular revolutions on the transverse axis of the body which were so distressing to the patient immediately after the accident were probably due to disturbance in the endolymph in the semicircular canals. The functions of these canals have not been thoroughly established physiologically, but it is more than probable that they have an important function in contributing to the maintenance of the equilibrium of the body, as when they are destroyed in the pigeon, it manifests peculiar rotatory movements. Whether or not the endolymph in the semicircular canals suffered a molecular disturbance, or was partially or completely lost, cannot be said with any approach to accuracy.

As to what the return of the headache, vertigo, and other such symptoms, a few months back were due, I will leave for others to theorize on; but this I may be allowed to say, that the patient has a great tendency to be hypochondriacal and is of a lithæmic constitution. So that these symptoms, so common to the latter condition, are not to be allowed too much weight as indicating any trouble in the head *per se*. It is unnecessary to speak of the treatment, so limited and well known is it. The treatment for ordinary acute inflammation of the middle ear will give as good results here as any other measures. Great care should be taken to avoid purulent infection of the meninges, and especially so if there had been previous to the time of the fracture any old inflammation of the middle ear. In such conditions antiseptic measures cannot be used too vigorously.

In conclusion I wish to thank my friend Dr. A. Gaston Roeth, of Boston, for kindly referring the case to me.

153 Lexington Avenue, New York City.

CASES OF UNUSUAL FORMS OF SPASM REPORTED FROM THE CLINICS OF S. WEIR MITCHELL, M.D.[1]

By CHARLES W. BURR, M.D.

CHOREAL FITS CAUSED BY VOLUNTARY MOTOR ACTS.

CASE I.—D. B. C., male, aged sixteen, student, American.

Family History.—Parents and only living brother are in good health. So far as can be learned, there have been no cases of mental or nervous disease in the family. The father, a school teacher, is a man of excellent habits.

Personal History.—Patient was perfectly well until eighteen months old, at which time he had scarlet fever, during convalescence from which he had one convulsion. His health remained good until present trouble began, five years ago. At that time, without apparent cause, without any shock or over-strain, he grew nervous, irritable, impatient, and easily angered. For some months the pulse remained at ninety beats to the minute, and temperature usually one degree above normal. Appetite voracious but not perverted. Soon his father noticed that on starting to walk and on changing gait from walking to running, his legs would momentarily stiffen at the knees. Sometimes on beginning to speak to his teacher, and on rising from a chair, "his arms would jerk and fly about involuntarily." These attacks increased in frequency, extent, and severity, until after about one year they assumed the character described below. Soon after the onset of the trouble, circumcision was performed for phimosis. There had been no genital irritation nor interference with urination. The operation did not influence the attacks. He has been treated several times, for from four to six weeks, with potassium bromide in unknown quantities, always with excellent result in diminishing the number of attacks, but with such attendant mental depression as to prohibit continuance of the treatment. Electrical treatment greatly diminished the number of attacks for a time, but finally failed.

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[1] Read before the Philadelphia Neurological Society, Dec. 28, 1891.

Present State (December 21, 1891).—Weight 127 pounds. Height, 5 ft. 7¾ in. Muscular development good. Color good. Skin leaky, especially after excitement. Abdominal and thoracic organs normal. Urine normal. Mental condition excellent. No evidence of the hysterical constitution. No history nor evidence of masturbation.

Station with eyes open nearly motionless, with eyes shut slight sway, one and one-half inch forward and to the right. The walk is slightly altered, there being a rather sudden lift from the heels. Knee-jerk, elbow-jerk, cremasteric, and abdominal reflexes very much increased. In arms and legs the muscle-jerks are marked, without humping, at the points percussed. Front tap is present from the knees down. Ankle clonus slight, say seven oscillations, after which a minute or two must intervene before it can be again developed. Sensation to touch, pain, heat and cold normal. No tremor is present either at rest or when arms or legs are extended. No ataxia on movement. The handwriting is slightly tremulous. The spine is without deformity, and there are no areas painful on percussion.

Dr. de Schweinitz reports: Pupils normal. Both optic discs slightly œdematous and margins veiled. Refraction H. No lesions of choroid or retina. Fields normal.

The attacks vary greatly in extent. Often there is only a momentary shrugging of the shoulders, slight to and fro movements of the arms, and a sigh, reminding one of habit chorea. These occur often when sitting quietly, and may be due to mere restlessness. At other times wild, jerky, choreic movements start in the arms or legs (in the attacks seen by me—Dr. Mitchell—always in the left arm), and soon become general. The patient seizes one arm with the other hand, bends forward, sways from side to side, grimaces, and sinks slowly to the ground. If he be holding something in the hand at the time of onset, he is able to shift it to the other hand and put it on the table. He is never thrown to the floor. Consciousness is unaffected. Duration about one minute. There is some flushing of the face. The tongue is never bitten. For a few seconds before the onset he has a "curious sensation," as he calls it, which he cannot more closely describe. The following attacks were seen by me (Dr. Mitchell). The left hand in wild athetoid motion, but opening and closing. Instantly the right hand followed and there were general movements in which he bent over into extreme flexion. In another attack he grasped the rung of his chair, being seated, and bent forward. Again, in another attack, while walking, there were the general movements with violent bending forward, until he crouched on the ground, and at the end was kneeling on one knee. There is no globus nor clavus. The attacks vary in frequency from forty in a day to none in three weeks. Rising from a chair, or starting to walk, is most apt to precipitate an attack. But this is an inconstant cause. The longer he has been seated the more apt is he to have an attack, and it begins usually at the moment the first effort is made to rise. Emotion of any kind seems to be without influence, and attacks are as apt to occur when he is alone or not watched as at other times. So far as known, no convulsive disturbance has ever occurred during sleep. His father states that the attacks are least frequent in the spring and summer, and most frequent in the autumn and winter. We have several times tried to induce an attack by muscle-strain in the manner described by Drs. Dercum and Parker, but without success. Attempts to hypnotize the patient have always failed. While receiving strychnia in ascending doses up to one-twentieth of a grain, t. i. d., at the Infirmary, the attacks markedly increased. Under thirty grains of bromide, t. i. d., the number fell remarkably, but he got into a state of irritable depression.

Remarks by Dr. Mitchell.—The manner of motion in these spasms is distinctively choreic. If the convulsions were continuous, the case would be labeled chorea major by any neurologist. It is worthy of note that it is the beginning of a willed action which gives rise to the worst fits, or else these occur during changes in a volitional action, as when he quickens his steps while walking. No attacks occur when recumbent or at rest, nor can they be then evolved by any act or excitation. Again, there is absolute clearness of head despite the enormous number of fits. The intellect, indeed, is of unusual excellence, memory very good; in a word, no least sign of the mental changes which incessant epilepsies occasion. Neither is there in the sensory sphere any sign of hysteria, and the courage with which he smilingly bears his disorder is most remarkable. There is no mental nervousness, no emotional fullness, while the color-fields remain normal. There is here no evidence of cerebral lesion. Chorea as violent as this, if of cerebral birth, would probably occasion some of the mental disorders apt to be seen in bad chorea of youth. There are, however, the plainest manifestations of spinal disease—double clonus, front tap, excited reflexes, and imperfect gait.

It appears to me that we may have in this lad a case of true spinal spasm. In other terms, he has spasms which may be spontaneous discharges from spinal ganglia. So that a slight motion of a leg, usually the left, may be all of the fit. But when a volitional order to rise from a seat is passing through the cord, it gives rise to disorderly movements on a large scale. These resemble chorea in their quality. Each onset is a fractional chorea and has no apparent resemblance to either an hysterical or an epileptic seizure. I have seen many epilepsies in which consciousness seemed to be preserved, but in a large majority of these there was found to be either a moment of lost consciousness or a mild blurring of consciousness. The undoubted cases were sometimes hysterical, but with all proper exclusions made, there remained a few cases in which, with typical and even violent epilepsy, there was full consciousness; but the present case lacks all the usual qualities of epilepsy and has an interesting likeness to the singular choreas which we described (in a paper read before the American Neurological Association in 1890) as probably of spinal parentage, like those of the dog. Certainly they are not epileptic; and either we must class them as cerebral-choreal fits, or as spinal-choreal fits.

Case II.—M. P., aged forty-eight, tailor, German-Hebrew, married, applied at the Nervous Infirmary, Dec. 21, 1877. At that time there was constant and rapid pronation and supination of the left hand, flexion and extension of the forearm, and slight rotation of the entire member around the shoulder. On attempting to hold an object in the affected hand, it would be thrown over his head. While sitting, the legs were quiet; but voluntary movements of the left caused spasm in it and increased that in the arm. Violent voluntary movements of the right arm or leg produced the same effect. He could not stand with eyes shut. He alleged that sitting on the hand was the only way in which he could prevent the movements in it. He attended the dispensary for a time, and then was lost sight of until May, 1891, when he returned, complaining of difficulty in walking and of violent involuntary movements of left arm.

Family History.—Father died of "cancer of the liver;" mother of old age. Eight brothers and sisters living and healthy. Seven died in infancy. There have been no cases of mental or nervous disease in the family.

Personal History.—Previous health good. Venereal disease denied and no evidence of it obtainable. Habits alleged to be good. He dates his present trouble from an attack of "bilious fever," which he had in January, 1877. A few months later he had pneumonia, and one morning, shortly after recovery, he awoke, after sleeping in a draught, with pain in the left arm and leg. He noticed, also, that the left leg dragged a little, and that involuntary movements appeared in the arm. He recovered, to a great extent, but being shocked by seeing his daughter faint in church, he rapidly grew worse again, and his legs became so weak, as he says, that he was confined to a wheel chair. He could move his legs in bed perfectly, but could not stand. He remained in this condition seven years. A friend then told him of a man similarly affected, who could walk backward. He tried this method of progression, and, finding it successful, adopted it. Some friends sent him to Germany, where, under treatment which seems to have been entirely mental, he improved greatly. Sometime later he underwent another shock, and rapidly lost ground again, but never entirely lost power of walking. We have been told by a physician who saw him when his son was desperately ill, that he threw aside his canes, ran about the room and gave as much assistance as an able-bodied man, until in about a half hour the boy died, when he sank into a chair, saying "Now I cannot walk any more."

Present State.—A rather spare, short, fairly-healthy-looking man. Abdominal and thoracic viscera normal. His breath has a curious, sour, disgusting odor, unlike that caused by decayed teeth or indigestion. His teeth, however, are foul and several of them decayed. Sexual functions normal. Intelligence good. He is emotional, prone to exaggerate symptoms, and likes to be put on exhibition.

There is slight sway with eyes open, becoming marked if they be covered. There is some uncertainty of movement on bringing the index fingers together, and in touching nose or ear with the left hand. On the other hand, he has no difficulty in picking up small objects or in buttoning his clothes. Sensation in all forms is normal. Knee-jerk varies from day to day, sometimes being quite marked, sometimes very slight, but never absent. It is always re-enforcible. Elbow-jerk also varies. There is an attempt at, but no true ankle clonus. Muscle-jerk is quite marked in the arms. The spine is straight, and on pressure there is pain at the level of the second dorsal vertebra. There is at times a coarse tremor of the hands.

He walks with two canes, which he holds straight in front of him, and on which he leans lightly. Except for the shortness of the steps, his gait is quite normal. If the canes be taken from him, he stands swaying slightly, and protests that he cannot move. If one hand be supported, he apparently makes violent efforts to step forward, and finally falls, sometimes quite heavily, but never injures himself. There is no true palsy. While recumbent, he can move his legs forcibly in all directions. At times there is a violent clonic spasm of the left arm, which often becomes general and may throw him violently to the ground. The movements are epileptiform in character. The attacks last about a minute. Consciousness is not affected. They occur always after muscular strain, as, for example, lifting a rather heavy book, or holding the arms rigidly extended, or even trying to quickly touch the nose or ear with the finger, or forcibly shutting the eyes. While formerly the spasm always began in the left arm, it now sometimes commences in the right. While in hospital, spasms could be developed by massage and by hypodermic injections of water. On the other hand, he can feed himself and carry his canes perfectly well. An attack never occurs spontaneously, nor, so far as known, during sleep. On attempting to write, the pencil is grasped tightly, pressed with violence against the paper, a letter or two fairly well written, followed by a few scratches, after which the pencil is thrown away with an air of disgust, and possibly the tremor, which comes on as soon as he takes it in his hand, develops into a general convulsion. All symptoms become much worse while he is under observation. Attempts at hypnotization failed.

Eye Examination by G. E. de Schweinitz.—External appearance of the eye is normal. The color of the irides is brown, and there is no asymmetry in tint or shade. The pupils are round, equal in size, and the reaction of the irides normal. There are no noteworthy anomalies of the external eye muscles. The cornaes are not anæsthetic. The central vision is deficient, owing to the presence of myopia.

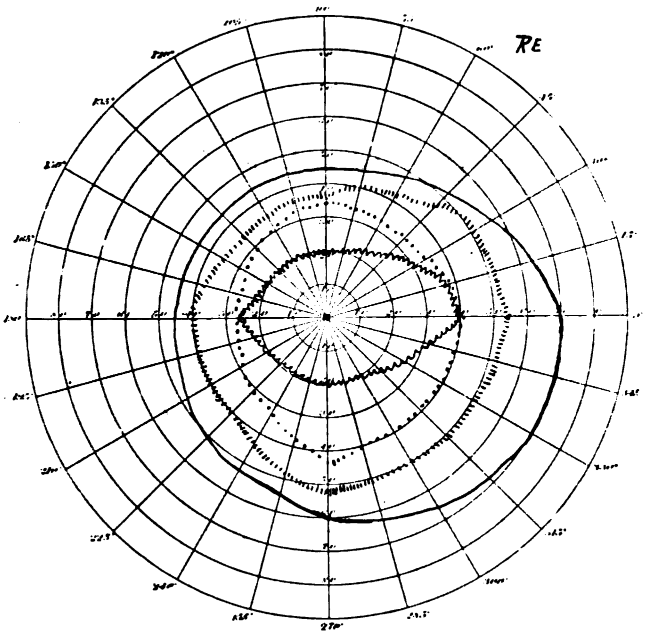

Fig. 1.—R. E.: The continuous line indicates the limit of the form-field; the line of short, vertical strokes, the limit of the blue field; the dotted line, the limit of the red field; and the zigzag line, that of the green field.

Opthalmoscope.—R. E.: Nerve-head nearly round, scleral ring broadened; some deficiency in the capillarity of the deeper layers. The veins are fuller than normal; the arteries, by contrast, slightly contracted. There is general absorption of the pigment-epithelium, exposing the larger vessels of the choroid. L. E.: The nerve-head is oval; the scleral ring, marked all around and at the temporal side, broadens, with a crescent of choroidal disturbance. The color of the disc is somewhat gray; there is rarefaction of the choroid.

Fields of Vision.—R. F.: There is concentric contraction of the form and color-fields. The colors are appreciated in their normal sequence, except directly above where the red and blue field have the same extent, and directly inward and outward, where the red and the green field are equal in extent. L. E.: There is remarkable contraction of the form and color-fields, and partial reversal of the normal sequence. The red field exceeds the limits of even the form-field in all meridians except directly below, where the form-field is the largest. The blue field equals the limit of the form-field above, and is smaller than the red field in all meridians, except below, where it equals it in limit. The green field is in its normal position in the color sequence, but is concentrically contracted.

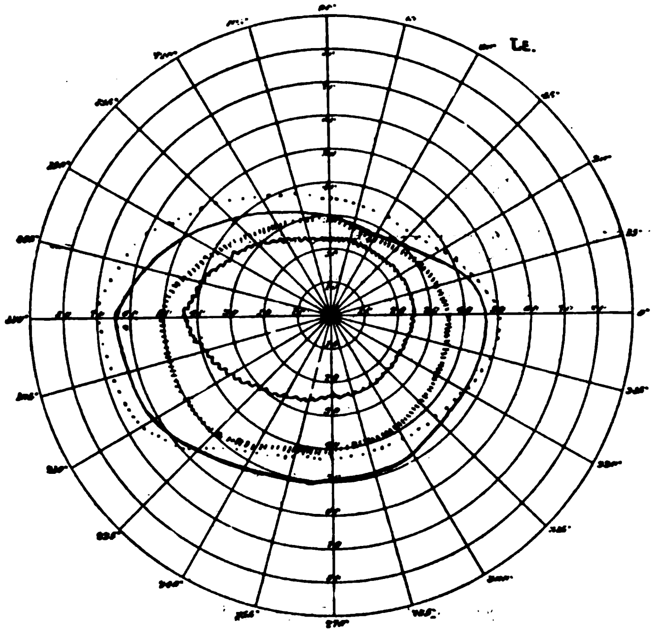

FIG. 2.—L. E.: The lines are as before, indicating respectively the limits of the form and color fields. It will be noticed that in contrast to that of the other diagram, the red for the most part occupies the greatest extent, exceeding in dimensions the form-field.

Remarks.—The appearances of the eye-grounds do not differ from those natural to a low degree of myopia, and the slight grayness of the nerve-heads is not more pronounced than is normal for the patient's age and general coloring. The behavior of the color-fields is similar to other observations which have been made in hysteria. There is no achromitopsia, such as Galezouski has reported in hysteria, but there is concentric ~~contraction and~~ partial reversal (on the left side) of the normal sequence in which the primary colors are an appreciated, corresponding to observations which have been made in France by Landolt in Charcot's wards, and in this country by John K. Mitchell and de Schweinitz in the wards of the Infirmary for Nervous Diseases, and in the practice of Weir Mitchell.

This interesting case is certainly one of male hysteria. The examination of the eyes, the emotionality, the expressive hysterical face, the form and quality of the fits, all leave no doubt. When we consider the nearer-producing agencies of his spasms, we observe that some are sensory, some due to mental and moral disturbances, and the larger number to motor acts. If I cover his eyes no result follows, but if while erect he shuts them firmly, a violent spasm comes on. In one sense the fits could be classed as choreal. He cannot walk without canes, and when they are withdrawn he falls, therefore his case might be classed under the absurd name of astasia-abasia by persons fond of such ingenuities.

CASE III.—A. S., aged twenty, single, female, no occupation, applied at the Nervous Infirmary, November 27, 1891, complaining of weakness of right leg and left arm, with involuntary movements in the latter.

Family History.—Father killed by accident. Mother died in confinement. Of eight brothers and sisters three are living and healthy; one was still-born, and the others died in childhood. No cases of mental or nervous disease in the family.

Personal History.—Patient was born at term; labor easy, and instruments not used. Healthy until sixth year, at which time it was noticed that she walked on the toes of one foot (which is not known). At about the same time the left arm began slowly to grow weak. Spinal lateral curvature was noticed at nine years. With the beginning of menstruation, at fourteen, involuntary movements of the left arm appeared on attempting to execute certain movements. This continued and, indeed, grew steadily worse until about four years ago, since which time the member has been to a great extent useless. She has never had a general convulsion, nor an attack of unconsciousness, nor globus hystericus, nor clavus. Her general health has always been good, except for occasional attacks of temporal headache.

Present State.—Small, thin, pale. Hair black; eyes brown. Abdominal and thoracic organs normal. Urine normal. Appetite fair, bowels regular. Menstruation normal.

There is constant coarse tremor of the entire body, except head and tongue, most marked in left arm and right leg. The little finger of the left hand is in constant clonic spasm, the interossei being alternately contracted and relaxed. There is also alternate contraction and relaxation of the hypothenar muscles.

Movements of the right arm are performed without difficulty. On attempting, however, to put the left hand to the head, on holding it rigidly extended, and on carrying an object to the mouth, quite violent choreic movements occur in it, and after a moment it falls to the side. All other movements are performed without difficulty. On extending the right leg and holding it unsupported similar movements occur in it, and may appear also in the arm. Holding the left leg or right arm extended increases the general tremor, but produces no choreic movements. The tremor may be controlled for a moment by effort of will. Emotion increases the violence of both forms of motor disturbance, but never causes an attack. Passive movement will not produce an attack. Sleep is perfectly quiet.

Dyn. R. = 42; L. = 35 (she is right-handed). There is no true palsy, but muscular effort soon causes tire. There is no ataxia; station good. Gait is tottering. The right leg is jerked forward apparently involuntarily, and the toes scrape the floor; but the foot does not drag.

Knee-jerk is much increased on both sides and is reenforcible. Elbow-jerk marked. Muscle-jerk in arms and legs marked. No clonus, no contractures, no wasting, no fibrillary twitching. Sensation in all forms normal. Slight anterior curvature of upper dorsal and cervical spine. Speech normal. Mental condition good. Emotions rather highly developed. Dr. de Schweinitz reports: Pupils normal, slight retinal haze. Fields normal.

There appears to have been here a sclerotic alteration, perhaps caused by cerebral lesions very early in life. It is difficult to say whether the small, choreal spasms, which in her case follow certain willed efforts, be cerebral or spinal. There is no mental disorder and there is evidence of spinal disease.

CASE IV.—A. C., aged twenty-three, New Jersey, seamstress. Her family, Quaker people, are unusually healthy. She herself was well until her third menstrual flow, which took place late, when over fifteen. Some religious excitement may be credited with the disorder of nervous system which followed. After several hysterical fits of no very grave nature, she was, one day, seized with a spasm on rising from a low chair. Her mother, who saw her, described her as bending over when half risen and as moving hands and feet in a wild and strange way. The attack was to her alarming and was followed by hysterical tears. From this time onward she never rose from the seated posture without a spasm. She could, however, get up from a supine attitude without a fit. When first seen by me, two years later, she was a tall, well-made girl, rosy and plump. Every function was well performed.

Her knee-jerks were excessive, and there was slight clonus in the right foot only. Nevertheless there was no spasticity of gait, and no excessive muscular reaction. Many of her attacks were seen, as she was a long while in the Infirmary. They varied little. As she rose and while the legs were still at a large angle, the attack began. The muscles, beginning to contract, did not prevent the girl from rising to the erect position; but at once the fit became general, and distinctly progressed from below upward, so that the thighs, trunk, belly, and chest muscles were involved in turn, and at last the upper extremities. The fit lasted five to twenty-five seconds, and usually after wild choreic movements, ended in what seemed to be a general contraction of the flexors, and then sudden relief. During the attacks, which, as they always followed effort to rise, I saw often, she gave evidence of the perfect preservation of consciousness.

No other motion or action was competent to evolve these fits. If while in bed she very abruptly rose, she escaped. If she sat five seconds there was a fit as she rose.

I was unable to help this case and lost sight of it. I have no doubt that it was of spinal origin.

A similar case, but of extreme violence, was reported by me in a paper on "Functional Spasms."[1] These were grouped under three heads: 1. Where a voluntary motion was liable to abnormal exaggeration. 2. Where a normal functional act (muscular) results in limited spasmodic action of remote muscles, not engaged in the original movement. 3. Where standing or walking gave rise to a general disorder of movement. Bamberger describes one of these latter cases, where the contact of the feet with the ground seemed to be the cause of spasm. I have reported a similar case, but I was never sure in my case that the commencing muscular acts due to standing might not have been the true parents of the spasm. Pressure on the soles did not cause spasm while the lad was on his back. Gowers has, too, a case of spasm from the act of rising (p. 990, Am. Ed.).

NERVE-STRETCHING IN INVETERATE TRIGEMINAL NEURALGIA.

Dr. Jas. Stewart (Montreal Medical Journal, February, 1892). Nerve-stretching gives either complete or great relief in the majority of cases. Relief is not permanent in more than five per cent. of cases. If the pain should return, the operation should be repeated, even several times, before resorting to a neurectomy, or ligature of the common carotid. If the pain is not strictly and always limited to one branch of the nerve, several branches should be stretched. As relief does not always immediately follow the stretching, a second operation should not be undertaken until some time has elapsed. A. F.

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[1] Am. Jour. Med. Sci., Oct., 1876.

Periscope.

EXCERPTS WILL BE FURNISHED AS FOLLOWS:

From the Hollandish, Swedish, Danish, Norwegian, German, Portuguese, Roumanian, Spanish and Italian:
F. H. PRITCHARD, M.D., Norwalk, O.

From the Swedish, Danish, Norwegian and Finnish:
FREDERICK PETERSON, M.D., New York.

From the German:
WILLIAM M. LESZYNSKY, M.D., New York.
BELLE MACDONALD, M.D., N. Y.

From the French:
L. FISKE BRYSON, M.D., N. Y.
G. M. HAMMOND, M.D., N. Y.

From the French, German and Italian:
JOHN W. BRANNAN, M.D., N. Y.

From the Italian and Spanish:
WILLIAM C. KRAUSS, M.D., Buffalo, N. Y.

From the Italian and French:
E. P. HURD, M.D., Newburyport, Mass.

From the German, Italian, French and Russian:
ALBERT PICK, M.D., Boston, Mass.

From the English and American:
A. FREEMAN, M.D., New York.

From the French and German:
W. F. ROBINSON, M.D., Albany.

The Editor will not accept as ORIGINAL ARTICLES and CLINICAL CASES those that have appeared elsewhere.

Authors are requested to make none but typographical corrections n the proof sent to them. The manuscript must represent the final orm in which the article is to be printed.

PATHOLOGICAL.

SPIDER WEBS AS CAUSES OF TETANUS.

A very interesting research was made by Doctors Tamassia and Fratini upon the spider web as to its infec-ious qualities, particularly in relation to tetanus. Their conclusions are published in "Rivista Sperimentale di Frenatria, e di Medicina Legale," Fas. iii., 1891.

1. The germs of tetanus are very plentiful in certain earths, and may be lodged with dust upon spider webs, attracted to webs, or wherever they may be found. The application of such webs upon wounds may be the cause of tetanus infection.

2. Even when spider webs are deprived of all tetanus germs they still contain other pathogenic germs, such as he micrococcus pyogenes dif.

3. The popular use of cobwebs as a hæmostatic upon wounds should be condemned, as fraught with grave results.

4. The appearance of tetanus following an application of cobwebs upon wounds constitutes an unforeseen and fortuitous accident not ascribable to the nature of the primary lesion. The long period which may elapse between the application of the web and the appearance of tetanus symptoms does not at all contradict the genesis of the tetanus, since it has been demonstrated experimentally that an equally long period of incubation may elapse when tetanus germs are inoculated taken from the earth.

W. C. K.

HEMICHOREA IN PREGNANCY.

Dr. Cameron in the "Montreal Medical Journal," January, 1892, writes, that, as in the non-pregnant, peripheral lesions may cause choreic movements, which subside when the irritating part is excised; so in pregnant women peripheral irritation may be propagated from the uterus to the central organs and may keep up choreic movements till the cause of irritation is removed. This is well exemplified in the following case: An anæmic, neurotic patient, subject to hysterical fits, bearing family rapidly, with a lacerated cervix and a tender retroflexed uterus, developed chorea of the right side of the body in the fourth month of pregnancy; in a few days the left side became involved while the right side began to improve. By appropriate mechanical treatment the retroflexion was corrected, and the chorea disappeared in little more than a week.

A. F.

NOTE ON THE KNEE-JERK IN THE CONDITION OF SUPER-VENOSITY.

(British Medical Journal, February 13, 1892.) J. Hughlings Jackson has observed that the knee-jerks are absent in some cases of emphysema with bronchitis, where the blood has become venous to an extreme degree. A girl, aged nine, with diphtheria, was tracheotomized on account of urgent respiratory difficulty producing cyanosis. Before the operation her knee-jerks were absent, but when the cyanosis had, on the following day, disappeared the jerks were obtained. In a dog artificially asphyxiated by clamping the trachea, the knee-jerks became exaggerated until knee-clonus was produced; but in the third stage of asphyxia no reaction could be obtained. As asphyxia diminishes or annuls the excitability of the motor cortex, the author thinks that the preliminary exaggeration of the knee-jerks here obtained was owing to loss of cerebral control upon lumbar centres, and that these strongly organized spinal centres succumbed later to the poisonous influence of super-venous blood than did the controlling cerebral motor centres. It is suggested that when oxygen is administered to cyanosed patients, their knee-jerks should be tested before and after the gas is given. If super-venosity is a cause of a loss of the knee-jerks, Dr. Jackson believes the fact may be important with regard to the apoplectic state, and perhaps also with regard to post-epileptic coma. He suggests in all cases of apoplexy or coma to note the degree of super-venosity, and to investigate, in regard to it, the state of the patients as to the tendon-reactions and superficial reflexes. A. F.

TÆNIA AS A CAUSE OF INTERCOSTAL NEURALGIA AND HERPES ZOSTER.

(N. Y. Med. Jour., March 5, 1892.) About a year ago E. C. Duryee, M.D., observed a case of severe intercostal neuralgia which, in spite of treatment, persisted for three weeks, when for the first time the patient passed some tapeworm segments. Upon getting rid of the worm the pain rapidly subsided. Since then the author saw a man suffering with herpes zoster, where examination of the stool revealed the fact that he was infested with tænia. Eight other cases of tapeworm have come under Dr. Duryee's notice, in which four of the patients had either intercostal neuralgia or undoubted shingles; and he is of the opinion that these affections are probably reflex symptoms of the digestive disturbances occasioned by that parasite. A. F.

CLINICAL.

HYSTERICAL FEVER.

Pucci has studied this subject and concludes as follows:

1. There is an actual hysterical fever.
2. It is one of the various forms of hysteria which has been studied, especially during these latter years.

3. It is produced by a paralysis of the inhibitory cortical heat centres; it may also be caused by an excitement of the thermogenetic centres.

4. It may present itself in young, marriageable and chaste women; in adults, the married and widows. According to Salomone-Marino it is more intense and obstinate in women who lead immoral lives. It may appear during pregnancy; it does not disturb pregnancy, neither does it influence the health of the fœtus. Males are also possibly subject to it.

5. It generally follows other hysteric symptoms of the diathesis, yet it may be an initial symptom.

6. It always accompanies other phenomena of hysteria, which may aggravate during the period of the highest temperature.

7. It may assume the quotidian or tertian intermittent type and the remittent or subcontinuous type; in the second case assuming the meningitic typhoid type.

8. It is accompanied by the ordinary symptoms of fever. It may rise to a high degree, and during the apyrexia descend to 35° C.

9. The same patient may present, successively, various modalities of symptoms, and, in its course, the fever may undergo notable interruptions of several days, and even months.

10. No general or visceral lesion is ever to be found. Nutrition remains good; but the mental condition of the patient may be disturbed.

11. It is refractory to all the antithermic remedies and to the salts of quinine; but it may yield to antihysteric treatment (Gazzetta degli ospitali, No. 91, 1891).

F. H. P.

A CASE OF WORD-BLINDNESS WITH AGRAPHIA.

There is an ever-accumulating mass of evidence to show that word-blindness may be produced by lesions lying in the region of the inferior parietal lobule or extending posteriorly into the angular gyrus and occipital lobe.

M. Serieux lately communicated an interesting case of word-blindness with a agraphia, to the Society of Biology, in which the only lesion that could explain the loss of the mental vision of graphic signs and the inability to write was a focus of softening which destroyed the inferior parietal lobule and the angular gyrus of the left hemisphere. The patient was a woman, aged seventy-three years, of fair education, without paralysis, and with intelligence still intact. The vision appeared to be good. There was no hæmianopsia, but the patient could not read; she could scarcely recognize a letter, much less make out a sentence. Although the movements of the right hand were perfect and she could manage the pen well, she could not write a word legibly. Writing under dictation, as well as writing from copy, were quite as difficult. The agraphia then was total. There was neither motor aphasia nor word-deafness. The patient died of ventricular hemorrhage. "This case," said the reporter, "seems to be a typical one; for the localization of word-blindness, as the only cerebral lesion to which the alexia could be referred, had destroyed the inferior parietal lobule in its entirety; but it is especially instructive from the point of view of the physiological pathology of the troubles of writing.

We are familiar with the conception of agraphia as it has been taught by Exner, Charcot, Pitres, and Ballet. There exists an autonomous motor centre, situated at the foot of the second frontal convolution, where are stored the graphic motor images whose sum constitutes the memory of the very complex muscular synergies which preside over the movements of the hand and forearm in the act of writing."

By the side of this form of agraphia in which the graphic-motor element plays a predominant rôle, should be placed agraphia consecutive to motor aphasia (Trousseau), and agraphia by sensorial lesion. To the latter group our case belongs. The mechanism of the loss of the faculty of writing is, in the latter class of cases, different, and is wholly independent of any alterations in the motor regions. These facts should be interpreted in the following way: Written language, being above all a copy of the optical images of letters and of words, disappears with the loss of the visual images verbal and literal. The sensorial element is here paramount, and the agraphia, instead of being defined *agraphic motor amnesia*, is simply *agraphic visual amnesia*.

We may, then, admit the possibility of the loss of the power of writing without any lesion of the frontal lobe, and consecutive to disappearance of the optical verbal images.

M. Déjérine, in discussing the subject, said, that the case of M. Seriaux was exactly like one which he published last year (Semaine Médicale, 1891, p. 112). It was a case of word-blindness with total agraphia, resulting from a lesion exactly localized in the angular gyrus.

Déjérine does not believe that it is an established fact that there is a special centre for the movements of writing in the second frontal convolution on the left side. The act of writing may be reduced by analysis to a copy of the optical images of letters and of words, and there is no proof that this act depends on a special and autonomous centre which plays for written language the same part as Broca's convolution for spoken language.

As the faculty of writing is subordinated to the faculty of reading mentally, and is nothing but the copying of our images of the optical memories of letters, we may always expect to see agraphia appear under the following two principal conditions: 1. When the centre of the optical memory of letters is destroyed. 2. When the connection of this same centre with Broca's convolution or with the motor zone of the superior member are interrupted.

Luys, at the same meeting, said that it seems well demonstrated to-day that the faculty of speaking is independent of that of writing. It is not rare to observe the dissociation of these two faculties in certain insane persons who are not delirious when they speak, and are delirious when they write. The inverse may also be witnessed. This proves clearly that the faculty of writing does not consist merely in the power of assembling letters, but in the psychical elaboration of words, of phrases, etc., of which writing is but the expression (La Médicine Moderne, January 24, 1892). F. H. P.

REMOVAL OF THE TUBES AND OVARIES.

The results of a thorough investigation of this subject by Wharton Sinkler, M.D., may be summed up as follows: The remote effects are, as a rule, to improve nutrition and better the strength, especially if the operation has been done for diseased ovaries or pus-tubes. Excessive gain of flesh is rare, and change of voice, growth of hair upon the face, and loss of feminine characteristics do not occur. The sexual appetite is seldom changed within two or three years, but after this time it becomes lessened. It is often the case that after this operation patients are more nervous than formerly, and various mental disturbances, insanity and epilepsy not infrequently follow. The influence of the operation is sometimes good upon insanity and epilepsy which are associated with severe dysmenorrhœa, or occur periodically at the menstrual epochs; but when the insanity is constant, although aggravated at the monthly periods, removal of the appendages is of no benefit. Hystero-epilepsy is seldom permanently cured, and prolonged after-treatment is generally necessary. Local pain is often not relieved. Certain cases of neurasthenia, associated with dysmenorrhœa, or structural changes of the ovaries, are cured; nevertheless no such case should be subjected to the operation without beforehand having the benefit of prolonged and patient treatment. It is unjustifiable to remove the ovaries and tubes in cases of neurasthenia, hysteria, etc., when these organs are healthy. A. F.

A CASE OF HYSTERICAL ANURIA WITH URINARY EMESIS.

Dr. Fabio Vitali, of Bologna, in the "Bulletino delle Scienze Medicle" for November, 1891, reports in brief a case of hysteria, in which there existed urinary vomiting with anuria from end of March to the end of July. In commenting upon the case the author asserts that hysterical anuria does not produce uræmic poisoning, because in these cases urea is present in infinitesmal quantities. The quantity of urea in the vomited matter did not surpass five grammes daily, neither was there an increase of urea in the circulation. He combats the theory that hysterical anuria is due to a spasmodic contracture of the ureters, but explains it as an inhibitory process of the nervous and secretory centres, similar to the pathogenesis of hysterical polyuria. W. C. K.

SUB-DURAL HEMORRHAGE.

In the "Am. Jour. of the Med. Sciences," February, 1892, Bremer and Carson have a very instructive paper, in which the following interesting case is cited: A healthy man, aged twenty-one, while intoxicated, fell between the joists of a new building. There were no evidences of any serious trouble until a week later, when he suddenly became unconscious and fell in the street. This attack was of only short duration, but soon after he became aphasic. No signs of any external injury to the head could be seen. Although understanding what was said, he could not repeat words spoken to him. He comprehended perfectly what he read. There was obliteration of the right naso-labial fold, and on showing his teeth the left fold became very marked and the left angle of the mouth was drawn to the left. During an effort to whistle there was puffiing of right cheek. The tongue deviated to the right. While unable to write words, he could put down figures with comparative ease. A diagnosis was made of blood-clot (probably extra-dural) pressing principally on the foot of third frontal (Broca's) convolution and the foot of the second frontal (probable centre for vomiting), impinging also on the face and tongue centres of left hemisphere. Symptoms of rapidly increasing brain pressure having set in, he was trephined an inch and a quarter behind the external angular process and the same distance above the base line. On opening the dura, a stream of dark blood forced itself through the superficial layer of the clot and spattered those standing two and three feet away. After removal of the clot he began immediately to improve, and in nine days from operation was discharged cured. A. F.

THE SIGNIFICANCE OF OCULAR SYMPTOMS IN BRAIN DISEASE.

C. A. Oliver, M.D. (Am. Jour. of the Med. Sciences, February, 1892) divides the special symptom-groupings into two kinds—the sensory and the motor—each of which expresses itself in two ways—the irritative and the degenerative. With proper and extended study of these four series, which he understands to be expressive of both sensory and motor changes in an apparatus extending through so vast an intra-cranial area, and with careful reasoning and accurate noting of the many changes constantly arising in the numerous combinations of their associated conditions and actions, much may be expected. In conclusion, he broadly asserts that when any part of this special sensory channel is irritated or inflamed, there may be hyperæsthesia, as shown by symptoms of increase of functional activity, such as phosphenes, etc., associated at times with coarse subjective changes in the fundus of the eye; but if it be lowered in vitality by any cause, anæsthesia will be present, as shown by decrease of physiological action, such as diminishing and actual loss of macular and circum-macular vision, which frequently may be connected with visible degenerative lesions in the ocular background. If there is motor involvement, both clonic and tonic spasms show themselves as the results of irritation, etc., while paresis and paralysis announce themselves if degeneration exists. A. F.

THERAPEUTICAL.

THE SURGICAL TREATMENT OF TRIGEMINAL NEURALGIA.

(British Medical Journal, February 6, 1892.) In concluding the course of Lettsomian Lectures, Mr. Rose maintained that he had demonstrated (1) that in severe cases of epileptiform neuralgia both medical and surgical treatment had hitherto been unavailing to give permanent relief; and (2) that extirpation of the Gasserian ganglion through the base of the skull, though admittedly a difficult undertaking, need not endanger life, and at present holds out the best prospect in dealing with the intractible forms of trigeminal tic. A. F.

DIETETICS OF EPILEPSY.

(Dietetic and Hygyienic Gazette, March, 1892.) Mr. John Merson, M.A., M.D., records the results of a series of observations on twenty-four chronic epileptics, undertaken to determine the value of a nitrogenous and a farinaceous diet in the treatment of this disease. Twelve of the patients were put on nitrogenous and the other twelve on farinaceous food, and this arrangement was continued for four weeks. At the end of this time, those previously on nitrogenous diet were transferred to farinaceous, and those on farinaceous to nitrogenous. This was continued for another period of four weeks, when the patients were allowed to resume their ordinary dietary. After assumption of nitrogenous diet many of the patients became more dull and stupid, but changed for the better so soon as farinaceous food was adopted. Out of the twenty-four cases, there was in fourteen a decided decrease in the number of fits during the period of farinaceous diet; the average number of seizures for the farinaceous period was 10.7, as compared with 28.3 for the nitrogenous period. Of the remaining ten cases, four had the same number of fits under each diet. Dr. Merson believes that after making due allowance for the short period of observation and the limited number of cases observed, there is still a certain indication that the actual number of fits is less under a farinaceous dietary than under nitrogenous. A. F.

BROMISM.

Prof. Lépine contributes an interesting article upon this subject. The dose of the bromide of potash has changed very much during the last few years. Gubler found a dose of six grams enormous; most of the French works give ten grams as a maximal dose. Two of the more recent ones, Soulier and Manquat, give this as a limit. Specialists, meanwhile, have a tendency to overstep this, and the tendency seems to be to increase it more and more. Féré, whom every one will concede to be a competent authority, is less reserved than formerly, and does not fear to administer from twelve to fifteen grams. In England, Gowers goes still further, and gives even thirty-one grams at a dose, which he does not advise one to overstep, on account of the vomiting which it is liable to cause. The English do not administer daily doses, but prescribe rather a dose every second, third or fourth day, so that there is given a long time for elimination. As to the German authorities, as for example, Nothnagel and Rossbach, Tappener and Penzoldt, they mostly give fifteen grams as the maximal dose; Bernatzick states twenty grams, and Boehm the same. The writer is not desirous of disadvising the use of these doses as they are sanctioned by undoubted authorities. Experience has also shown that these doses are not dangerous; but the question is, are they necessary?

He does not regard it as sensible to begin with enormous doses when possibly a smaller one will do. Above all, one should not injure the patient, and it is a question whether such doses, as have been mentioned, can be given without harming, even though naphthol simultaneously be given, as Féré recommended. The writer has found antisepsis of the intestinal tract to prevent cutaneous eruptions yet not to influence the nervous depression. He has observed nervous symptoms of bromism, and he has been struck by their insidious development. The diagnosis is not always easy, and he is convinced that, in case that they are misunderstood they may produce death. Most writers on therapeutics give the symptoms of chronic bromism. Sollier has presented an especially good description. There first appears a dyspeptic condition, which is followed by bronchitis; then eruptions, and finally cachexia, which is characterized by emaciation, an earthy complexion, incipient paralysis of the extremities, trembling of the limbs and coldness, a dirty coating to the tongue, anorexia, diarrhœa, apathy and weakness of memory, sometimes delirium, hallucinations, and intense headache, as well as mydriasis of one eye. Nothnagel and Rossbach also give thirst, and a cough resembling whooping-cough. At the same time there is absence of the pharyngeal reflex and difficult speech, which, in combination with the clouded intellect and tremor of the hands, might lead one into making a mistaken diagnosis of progressive paresis. This is the classic picture of bromism, in its chronic form. The writer does deny the correctness of this, but will question whether all these symptoms will present themselves in the given order. Some may be lacking and the cachexia may appear before the bronchitis; in short, it is of importance for the practitioner to know that the symptoms follow no regular order in their appearance. The writer has recently seen a young tabetic lady, who took the bromide of potash in doses of four grams daily, for the treatment of convulsive attacks. After a few weeks the patient, who was weak and run-down, began to become still weaker and delirious. No eruptions or bronchitis, so that if one had waited for the development of those symptoms, death would surely have intervened. The writer recognizes bromism by the mental and bodily weakness, delirium and difficult speech. If the bromide be discontinued the symptoms soon disappear. Voisin has described a peculiar form of bromism, where, together with the symptoms presented by the writer's cases, there are, besides, distinct and violent delirium, which is described as a general delirium accompanied by hallucinations, ideas of persecution and of fear of being attacked, etc. The writer observed nothing of the kind in his cases. The chief danger of bromism is the depression, which danger is by no means exaggerated. As a rule, leaving off the remedy is followed by a restitution to the normal, yet recovery sometimes may be very slow. Kloepfel has communicated the case of a patient who fell into a cachectic state from a three-years' misuse of the bromide of potash, and who required six months to recover. Culler reported the case of a morphine-taker, who was treated with increasing doses of the bromide of sodium, consuming one hundred and twenty-five grams in a week; he fell into a lethargic state, lasting eighteen days, during which time the most violent cutaneous faradisation was followed by no reflex. Life was sustained by rectal feeding. Cases which have ended fatally have been recorded. Dr. Hameau has reported a case, where a twenty-two-year-old woman, who was epileptic since her seventeenth year and who was treated with increasing doses of the bromide of potash, two to sixteen grams. In the course of a year she had taken two kilograms of the drug. She was emaciated, cachectic; her forehead was covered with copper-colored papules; she suffered from gastralgic pains and colicky attacks; and, finally, a dry cough bothered her. Delirium set in and she died the following night. A case, described by Dr. Eigner, and of more recent date, a young female epileptic, nineteen years of age, took, in the course of a year, at least six grams of the potash salt, and in the last two weeks, ten to twelve grams per day. Besides a universal acne and a badly smelling breath, she presented nasal and pharyngeal catarrh, salivation, the saliva being able to be drawn out in shreds, anorexia, meteorism, pains in the forehead and lumbo-sacral region, and weakness of memory. Toward the end there appeared: somnolence, unequal pupils, trembling of tongue and hands, diminution of the sensibility of the lower extremities, and decrease of the tendon-reflexes, as well as hesitating and difficult speech, without any actual disturbance in articulation. Finally there appeared psychic excitement, which increased to delirium, with hallucinations of the different senses. Death took place from broncho-pneumonia. The changes which take place in the nervous system under such circumstances are not well known; the accumulation of bromides in the tissues is still a disputed question.

F. H. P.

TREATMENT OF CHOREA WITH EXALGINE.

Dr. Hugo Löwenthal reports the results which he obtained with exalgine in the treatment of chorea, in the Berlin Polyclinic. In the course of the year 1891, he treated thirty-five patients with this remedy, in doses of two decigrams, three times per diem, giving it in some cases five times daily, so that the daily dose did not exceed one gram nor sink below six decigrams, excepting in the case of a three-year-old boy, who received but one decigram once a day. He prescribed the powdered drug

o be taken dissolved in warm sweetened water. The
atients' ages varied from three to eighteen years. The
ength of the treatment varied from eight days to four
nonths. A large number of the patients came under
reatment immediately after the outbreak of the disease,
n the second or third day. In these cases the remedy
cted so well that, for example, in two boys, a cure was
ffected in eight days. Other patients came under obser-
ation at the eighth or fourteenth day of the disease.
The average duration of this disease was five to six
veeks. Some few children were brought after the dis-
ase had been progressing for weeks. An improvement
vas remarked in some patients after twelve powders of
decigrams, or a total dose of 2.4 grams; in most of them
fter twenty-five to thirty powders, hence after 4.5 to 6
rams. In violent cases of chorea, where the muscles of
he face, body and extremities were greatly envolved,
he condition became worse during the first two weeks,
o improve gradually, yet slowly. Its action was excel-
ent in those cases accompanied by anxiety, psychic ex-
itement, violent weeping, and peculiar behavior of the
hildren; these symptoms disappeared already in the
irst week. Difficulties in speech or rapid speech were
apidly improved, once already after the sixth powder;
alivation, which in two cases was quite profuse, ceased
luring the first eight days. Weakness of memory was
avorably influenced. Formication in the fingers and
rms disappeared after twelve powders, in one case;
rticular pains vanished in a one-year-old boy after twenty-
our powders. Together with this favorable action, dis-
greeable, a side-action was remarked, as roaring in the
ars, a feeling as if one were intoxicated, spots before the
yes, nausea and vomiting, increase of already existing
ains, headache, cyanosis and icterus. These soon dis-
ppear after leaving off the remedy, and did not reappear
fter commencing its use. The patients became easily
ccustomed to its use (Wiener medicinische Presse, No.
, 1892).

Germain Sée claims that there is no specific in chorea.
Arsenic and antipyrin give the best results in ordinary
ases. Where rheumatism is suspected at the bottom of
he disease, the salicylate of soda is associated with anti-
yrin. In cardiac chorea he prescribes chloral and hydro-
herapeutics, associated with heart remedies: the iodide
f potash, and especially the iodide of calcium. Auguste
Voisin employs the iodide of potash, up to 8 grams per

diem, together with douches, every day, twice a day. Gymnastics and avoidance of all intellectual work or excitement. If the disease resist this treatment, he employs the oxide of zinc, associated with the bromide of potash. The oxide is given in doses of 2 decigrams per diem, in pills, as a maximal dose; but then the bromide should not be administered beyond 4 grams daily. Each pill of the oxide should contain 1 cgm., and one may begin by administering two pills twice a day, increasing by 1 centigram per diem until one reaches 20 cgms, the maximal dose; in young girls he adds extract of valerian to the zinc preparation. He claims that it is rare that chorea can resist this treatment methodically carried out. Simon employs rest in bed, revulsion to the upper portion of the spine, by means of mustard poultices, hot frictions and dry cups, hot-air baths, given in bed, every two days. Internally, he administers the tincture of aconite and cisuta, 10 to 15 drops in twenty-four hours; if fever be present, the sulphate of quinine. Antipyrin he puts great confidence in. Methodic gymnastics are of great service as after-treatment (La Semaine médicale, No. 13, 1892).

The eclectics claim results from actea racemosa—black cohosh (Translator). F. H. P.

NOTE RELATIVE TO THE BUFFALO LITHIA WATER.

There is a point in relation to the therapeutical efficacy of the Buffalo Lithia Water which has not as yet, I think, received sufficient attention. It is well known that many cases of diseases of the nervous system are complicated with lithæmia, and unless this condition is removed a cure is very often retarded and not frequently entirely prevented. It is quite commonly the case that in cerebral congestion producing insomnia, nervous prostration resulting from over-mental work or much emotional disturbance, and in epilepsy (to say nothing of many cases of insanity) an excess of uric acid in the blood is often observed. This state appears to be altogether independent of the character of the food; for no matter how careful the physician may be in regard to the diet of his patient the lithæmic condition continues. I have tried to overcome this persistence by the use of phosphate of ammonia and other so-called solvents for uric acid, but without notable effect.

Several years ago, however, I began to treat such ases with Buffalo Lithia Water, with a result that was stonishing to me as it was beneficial to the patient, so hat now in all cases of nervous diseases under my charge n which there is an excess of uric acid in the blood, I use he Buffalo Lithia Water in large quantities. By this I nean that I do not have the patient drink merely a tum-ler or two in the course of the day, but that I flood him, o to speak, with the water, making him drink a gallon r even more, in the twenty-four hours. By this course he urine after a few days ceases to deposit uric acid rystals on standing, the morbid irritability of the patient isappears, the tongue becomes clean, the wandering ains in the head are abolished, and the system is ren-ered much more amenable to the special treatment which nay be necessary for the cure of the disease from which he patient suffers.

I have tried carbonate of lithia, dissolved in water, in arious proportions; but it certainly does not, in cases to hich I refer, have the same effect as Buffalo Lithia Water.—WILLIAM A. HAMMOND, M.D.

Washington, D.C., Jan. 25, 1892.

Society Reports.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of March 1, 1891.

The President, Dr. L. C. GRAY, in the chair.

HYSTERIA IN A CHILD.

Dr. W. M. LESZYNSKY presented a patient, a young girl, whom he said he had brought to demonstrate that we did have in this country cases of hysteria in children. She was, he said, only thirteen years of age. Two and a half years ago, after fright from a dream, the hysterical symptoms had manifested themselves in paroxysms of laughing and crying. In 1891 she had commenced to menstruate and had then begun to have convulsive seizures, which were usually worse at the menstrual periods. She had passed through conditions of pure motor aphasia, and at the present time there were attacks of muteism lasting for a week or more. She also now had convulsions lasting sometimes many minutes and at other times for hours. There were now developed hystero-genic zones over various parts of her body. She had visual hallucinations and occasionally maniacal attacks and movements of rotation and of combined rotation and retropulsion. Her visual fields had been contracted. Lately there was a transient hemiplegia. There were no sensory disturbances. Knee-jerk was present, but only slightly marked. There was no history of onanism, no ovarian trouble, and the general health of the child was good. This was the patient he had referred to on a previous occasion as becoming worse after hypnotism.

The speaker then touched the patient upon the head, in one of the alleged hystero-genic zones, when a convulsive seizure promptly transpired.

MORVAN'S DISEASE.

Dr. B. Sachs presented a man of twenty-eight years of age, whose occupation had been that of a dish-washer and driver. The patient had had a veneral ulcer with bubo in the right groin. Since then he had been healthy until four years ago. Then, while at work as a dishwasher, his hands had lost muscular power; there was twitching of the fingers and thickening of the skin. Thinking the soda in the water was causing the trouble, he had left this work, but the hands had grown constantly worse. At present the skin on the dorsum of the right hand was normal, but that on the dorsum of the fingers was thickened. There was a slight contracture at the second phalangeal joint in all of the fingers, but more marked in the middle and the index. The dorsum of the thumb showed a small eschar, but there was no contracture. There was marked atrophy of the first dorsal interosseus. The skin of the palmar surface of the hand was thickened, and showed numerous rugged excoriations of the derma, on which were a few fissures extending through the cutis vera. On the anterior surface of the right forearm was an area of dermititis resembling ichthyosis. At the bend of the elbow was an area four inches long by an inch wide, in which were numerous small depressed atrophic areas resembling an atropho-derma circumscriptum albidum. The patient thought that this had resulted from carrying a basket on his elbow. The skin of the dorsum of the left hand was normal, but thickened on the dorsum of the fingers. On the thumb there was an irregular excoriation with fissures and deformity of the nail of the index finger, the end of which was conical. The end of the middle finger was markedly clubbed, the nail thickened, and presenting white and opaque striæ.

The dynamometer test gave m. d. 30; m. s. 60 kg. The muscular sense seemed normal. Tactile and pressure sense were normal. The pain sense was abolished in an area on the dorsum of the right hand and over the dorsum of the fingers, hand and ulnar side of the left forearm. There was a sense of cold to a temperature of 212° F. on each arm, excepting at the bend of the elbow, where heat was recognized; but at this point a temperature of 150° F. felt cold. Temperature of 190° to 200° was recognized at the upper portions of the arms and back, though lower temperatures were called cold, and in several places on the back a temperature of 32° F. was called warm. Electrial reactions to faradic current were absent in the extensor-muscle group, while the flexors responded. There was reaction of degeneration over extensor muscles of both arms and in the interosseii of both hands.

Dr. M. A. STARR said that in a late discussion on syringo-myelia it had been stated that no case had come to autopsy in which a diagnosis had been made during life. He had lately received photographs of four spinal cords from cases from the Salpêtrière in which the diagnosis had been so made.

Dr. C. L. DANA said he was far from being convinced that there was at present anything the matter with the patient's spinal cord. He had seen a similar condition which was really one of peripheral neuritis. He thought it possible for Morvan's disease to exist as an independent trouble. The case before them was interesting and in many respects a connecting link, but he should hesitate in unreservedly accepting it as one of syringo-myelia.

Dr. SACHS said that some improvement had taken place in the areas of sensory disturbance which would hardly be expected in a case of peripheral neuritis.

THE DISEASES AND CONDITIONS TO WHICH THE REST TREATMENT IS ADAPTED. (See page 321.)

Dr. E. D. FISHER did not advocate the carrying out of the rest-cure principles too rigidly. He had seen a patient with nervous disease sent to Philadelphia for the purpose of isolation from her family make a very rapid retrograde mark toward the grave. This was noted in time to apply the remedy, which consisted in bringing her back to this city.

Dr. STARR said it was his custom to send his patients to Dr. Weir Mitchell. Possibly one-half the benefit from the course arose directly from the hypnotic suggestion with which it was associated, and this could be better carried out in a special institution. He believed the rest treatment to be admirable and applicable to many cases, but not to all. It would be the more likely to succeed where mental suggestion was of direct benefit.

Dr. SACHS thought that in cases proper for such treatment it might be just as effective here as in Philadelphia. It was more satisfactory when used in its more modified forms. A goodly number of cases in females classed as hysterical were really hypochondriacal, and for these isolation with one attendant was not to be advocated.

Dr. G. JACOBY called attention to the very pronounced obesity which has often ensued from the rest in bed.

Dr. S. B. LYON, alluding to the possible objection to manual massage by reason of the personal element, said that at one institution massage was effectively carried out by mechanical methods.

The PRESIDENT said that he had used the method for twelve years, and was willing to accord the genius of Dr. Mitchell all it deserved. Experience had not demonstrated the plan as universally efficient. In genuine hysteria, hysteria associated with mal-nutrition, emotional hysteria, cases of over-draft upon the physical capacity by work or other causes in which the disturbance was functional, not organic, he believed the treatment in most instances would be found invaluable, while in melancholia it was not so useful. The plan must always be modified to suit special requirements. He did not believe in the massage part of it. Patients became beautiful to look upon, but their muscular capacity amounted to nothing.

Dr. **Sinkler** thought that in Dr. Gray's cases massage could not have been given thoroughly; it was essential as a whole, but should always be combined, if possible, with the Swedish movements.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Stated Meeting, December 28, 1891.

Vice-President, **Wharton Sinkler**, in the chair.

Dr. **Weir Mitchell** read a paper on

CASES OF UNUSUAL FORMS OF SPASM REPORTED FROM THE CLINICS OF S. WEIR MITCHELL, M.D. (See page 349.)

DISCUSSION.

Dr. **Francis X. Dercum.**—I had the fortune to see this man many years ago. He at that time had excessive rigidity of the left leg and also of the left arm. The position resembled what we see in hysterical contracture or in secondary contracture in hemiplegia. He had at that time, to some extent, the phenomena described by Dr. Mitchell to-day. I remember that excessive clonus could be excited in the arm and that there was exaggerated knee-jerk. I attempted to make him walk and he managed to scrape along the floor backward.

Dr. **Charles K. Mills.**—It seems that the interest in this case attaches more to its nature. I should hardly be inclined to regard a case of this kind spinal, unless I misunderstood the use of the word spinal. To my mind, in a negative rather than in a positive sense such cases may be so regarded. In all these cases of spasm and tremor brought on by voluntary effort—or, as in one of two cases which I reported in the International Clinics—by thinking of an effort—it seems to me that the cerebral element, positively or negatively, is most important. These cases are spinal in the sense that the movements are not controlled by cerebral action. They are not purposive movements, or at least not purposive in all cases at all times. In the case of athetoid spasm and myotonia which I reported to the American Neurological Society, I had an opportunity of making an autopsy, and found widespread meningitis of the parietal convexity and softening beneath it. Of course, that was not a case of the character shown to-night, but it was an instance of organic disease in which the spasms were brought on by voluntary effort or by thinking of effort. It is probable that, in most of these cases, a want of cerebral inhibitory power has much to do with the occurrence of these movements.

DR. FRANCIS X. DERCUM.—It seems to me that the symptoms in the case shown are in one sense spinal. They certainly resemble those seen in lateral sclerosis, although it is probable that the withdrawal of the function of the centres controlling the movements of the legs has much to do with the occurrence of the intense spasm.

It further seems to me that by using his canes in the peculiar manner that he does, the man may gain that sense of security which a child feels when crawling on all-fours. When he feels the floor, the centres supplying the legs are re-enforced, as it were. The case is doubtless a mixture of cerebral and spinal phenomena.

Book Reviews.

TREATISE ON GYNÆCOLOGY—Medical and Surgical. By S. Pozzi, M.D. Translated under the supervision of Brooks H. Wells, M.D. Illustrated. New York: Wm. Wood & Co.

The work is of large size and in two volumes. The original is a standard work abroad, and in its translated form, with additions, it is safe to conclude that it will be a favorite work in its branch of medicine here. It is thought highly of by a number of the reviewer's friends, and the reviewer himself feels kindly disposed and recommends it to the readers of the JOURNAL. The editor of this volume, in his preface, tells the story of the book and gives his idea of its value:

"The treatise here given to English readers is undoubtedly the best work on Gynæcology which has appeared for many years in any language.

"The cosmopolitan spirit of its author shown in his exhaustive research and judicious appreciation of the work of other nations, together with his keen and mature judgment in utilizing the material from his own rich field, make it a clear and reliable guide to the most advanced and best practice in this specialty."

This is in most part true, except as to the thoroughness of treatment of each subject dealt with. The translation is conscientious, the plates fair, and the make-up generally satisfactory. The editor has added some rather showy colored lithographs, which undoubtedly serve more a commercial purpose than a scientific one.

From a neurological standpoint there is nothing new or anything to criticise. It is certainly, however, a valuable book of reference.

THE PRINCIPLES AND PRACTICE OF MEDICINE, Designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D., Fellow of the Royal College of Physicians, London; Professor of Medicine in the Johns Hopkins University and Physician-in-Chief to the Johns Hopkins Hospital, Baltimore. 1,079 pages. Sold only by Subscription. New York: D. Appleton & Co., Publishers, New York.

One would imagine works on Practice of Medicine were at a discount and that the field had been pretty well gone over and that little were the need for the busy practitioner and student to encumber his library with another. When Strümpell's admirable work was translated and published in this country, much appeared in its pages that was commendatory. New ideas, conciseness, and clear pen-drawn diagnostic pictures, pronounced it at once the best; and it was declared a necessary disiduratum to the beginner or the active student in medicine.

The work here considered is an American production and a monument to American research. A finished outgrowth of the brains of one of the ablest physicians of this or any other country, and a fitting tribute to his persevering, discriminating, and careful study. Dr. Osler's book is a safe guide to follow in precepts of practice. IT IS crisp, dogmatic, sheared of uncertainties, and devoid of ambiguities. Where he is positive, little need be feared of errors due to his blind acceptance of others' opinions. All matter has been sifted, tested, and where a doubted question still remains unproven, he marks the place, and says "alack a day." It is certainly an enviable work for clearness in all departments on which it treats. It would tarnish this so far best text-book on practice, to quibble on minor points of difference to one's opinions. While giving the full expression to his own individuality, his modesty always appears in the courage to side by side express others' opinions that perhaps might be as safe a guide to follow.

Therapeutics are not juggled into incomprehensible, uncertain paths with no signboard to point to a safe termination. His confidence in drugs is limited and his directions in the use of those he recommends are positive.

The eighth section of this work is devoted to the diseases ot the Nervous System, and it is most fitting that we should more particularly speak of this. It comprises 219 pages, and when we take into consideration that these 219 pages are a digest of diseases without being hampered in volume by dissertation on Anatomy, Physiology, Histology, and profuse illustrations, the conviction is, that as much of this valuable volume is given this subject as well could be. It is of interest to emphasize that brevity in the treatment of the subject is not at the sacrifice of any important details. The digest is finished, little is lacking to aid the reader to obtain a full and comprehensive picture of the various diseases of the nervous system. This part of the work was perused with interest by the reviewer. For the nonce he lays the book down, convinced that it will often be to him a valued mentor.

Messrs. Appleton & Co. may well take a more than pardonable pride in presenting this ideal text-book to the profession. Though we cannot help regret the specializing the fact: "Sold only by subscription." Books like this deserve a broad field and possibilities of ownership.

NOTICES.

THE AMERICAN NEUROLOGICAL ASSOCIATION.

The Council of the American Neurological Association have decided that the Eighteenth Annual Meeting of the Association shall be held at the New York Academy of Medicine, 17, 19 and 21 West 43d Street, New York City, on Wednesday, Thursday, and Friday, June 22, 23, and 24, 1892.

The following list of papers has already been received by the Secretary:

The Sensory and Motor Disturbances Asssociated with Insanity. By Dr. H. A. Tomlinson.

Separate Provision for Epileptics. By Dr. H. R. Stedman.

Pathology of Paralysis Agitans. By Dr. C. L. Dana.

Phthisis in its Relation to Insanity and to Other Neuroses. By. Dr. Thos. J. Mays.

Progressive Muscular Atrophy—Report of a Case, and Specimens. By Dr. Græme M. Hammond.

The Successful Management of Inebriety. By Dr. C. H. Hughes.

Papers will also be read by Drs. C. H. Mills, B. Sachs, Wharton Sinkler, J. J. Putnam, F. X. Dercum, H. M. Bannister, Jas. H. Lloyd and others, the titles of which will be announced later.

The second annual meeting of the American Electrotherapeutic Association will be held in New York, October 4th, 5th, and 6th, 1892, at the New York Academy of Medicine, 17 West 43d Street.

W. J. MORTON, M.D., *President.*
H. R. BIGELOW, M.D., *Secretary.*

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vious Notes we have characterized, as follows, the requisites of a well- pill:

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PRECISION as to weight and division.
PERFECT UNIFORMITY as to activity and identity.
PROMPT SOLUBILITY of mass and coating.
PERMANENCE as to conservation.
PALATABILITY; and ELEGANCE of appearance.

t Uniformity as to activity and identity is largely dependent upon the oints in the above list—purity and precision—which immediately precede our nt theme, and to them we have referred in other notices. Purity aids in ing uniformity as to activity, for unsound materials are subject to progressive ical changes which give rise to wide variations in strength. Uniformity as to ıt is to be obtained only by using the greatest care in mixing and dividing the ıass. Stability is so important a factor, not only in securing uniformity, but ill more obvious reasons, that we will refer to it in a future note.

while we ask attention to the following preparations, which, with many s in our list, will be found to realize the conditions we have described. Among ills here cited are some useful preparations for this season:

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Syphilis.	Parv. Calomel	1-20 gr.
Syphilitic Headache.	Parv. Cor. Subl.	1-100 gr.
Torpidity of Liver.	Parv. Podophyllin	1-40 gr.
Vesicular Emphysema.	Parv. Digitalis	1-20 gr.

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JUNE, 1892.

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BY C. A. BRICE, M.D., RICHMOND, VA.,

Editor of *Southern Clinic* and *The American Doctor.*

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THE Journal OF Nervous and Mental Disease.

Original Articles.

HYPNOTISM AND HYSTERIA.

By J. BABINSKI,

Chef de Clinique, Salpetriere, Paris.—Translated by W. J. HERDMAN, Prof. Diseases Nervous System, University of Michigan.

THE ROLE OF HYPNOTISM IN THERAPEUTICS.

PROFESSOR CHARCOT has honored me with an invitation to lecture in this amphitheatre upon hypnotism.

Innumerable works have been published upon this subject, and it is not my intention to give its history. I only wish to remind you that this subject was first studied by the English physician Braid, but did not enter definitely into the domain of science until the work of M. Charcot rigorously established the reality of this nervous condition.

You all know, gentlemen, how hypnotism is regarded at la Salptêrière, and you also know that a group of physicians—at whose head may be placed Dr. Bernheim, of Nancy—entertain ideas which are diametrically opposite. In a work entitled "Great and Small Hypnotism," published in 1889, in the *Archives de Neurologie,* I tried to show that, in spite of all the attacks, of which we have been the object, the doctrines of Paris have not been shaken.

I cannot open up that discussion here, for my time is limited; and besides it is useless to repeat what has already been said, and each can appreciate for himself the value of the argument which I have furnished. I wish simply to develop an abridged chapter of this memoir, that one which treats of the relation between hypnotism and hysteria.

At la Salpêtrière it is maintained that these two conditions present intimate relations and that hypnotism lies within the province of pathology.

At Nancy it is believed that hypnotism is a physiological phenomenon.

On the other hand, at la Salpêtrière without rejecting —far from it—hypnotism from the therapeutical arsenal, it is thought that its indications are limited, and that this mode of treatment could scarcely be applied to hysteria with success. At Nancy it is admitted, on the contrary, that most diseases may be benefited by the use of this method.

Here, then, are two connected questions upon the subject of which absolute disagreement reigns, and which I propose to discuss in this lecture.

To form an exact idea of the relations which may exist between hypnotism and hysteria, it is evidently indipensable to be first perfectly settled as to the exact value of each of these terms.

First, what is hysteria?

You will tell me, perhaps, that there can scarcely be a discussion upon this subject, that the meaning of the word is absolutely determined, for it corresponds to a nervous state which all physicians have had occasion to observe.

This is true if one has in mind hysteria in its most perfect forms.

Here is an example, a patient in whom is recognized the existence of a complete hemianæsthesia. The general sensibility of the affected side is entirely wanting; the patient has lost the sense of hearing, smell and taste on the same side; a concentric contraction of the visual field is observed, monocular polyopia, ambliopia, a special discromataposia, characterized by the loss of vision of violet, blue, and of green and a persistence of red. In addition to these permanent signs of neurosis, the patient has presented, at different periods, episodic phenomena—such as attacks marked by epileptiform convulsions, contortions, dramatic attitudes and delirium; tracheal and crural paralysis, relaxed and spasmodic aphonia, hiccough, rhythmic chorea, etc. No one would hesitate to recognize that this total of manifestations corresponds to a distinct nosographic species designated by the name of hysteria.

But these neuroses do not always present so striking an aspect; the atypical cases are much more numerous than the typical cases, and they are often unrecognized by physicians who are little versed in the study of neuropathology.

First of all it is necessary to be well fortified against erroneous ideas transmitted by tradition. Frivolity, carelessness and instability were formerly considered as characteristic of the psychic condition of hysteria, and it was admitted that the somatic manifestations were essentially transitory. These ideas, inexact if applied to all cases of hysteria in women, are, as you all know, completely erroneous as to hysteria in men, and naturally for the physicians who still hold them, the field of this neurosis is singularly contracted. The symptomatic picture of hysteria in its most perfect form may be considered as an assemblage of distinct parts, each representing one of the syndromes of the neurosis. The picture may degenerate by the successive loss of one or more of its parts and reach the limit of being constituted by one among them. This is mono-symptomatic hysteria.

Among the syndromes of hysteria there are some which present a symptomatic aspect so special that, even in the absence of any other sign of neurosis, the nature of the affection may be immediately recognized. I will cite, for example, dumbness, the glosso-labial hemispasm; these are, in some sort, specific accidents of hysteria.

Other syndromes, on the contrary, are not in their forms a pathognomonic mark. Such are certain varieties of anæsthesia of paralysis, of contractures.

When not accompanied by other manifestations of hysteria, the diagnosis may be, at times, very different, and it is then the evolution of the malady or some particular circumstances which permit the solution of the question.

Hysteria may also assume the appearance of affections of the most diverse forms. Yet it is not impossible to unmask them.[1]

I evidently cannot indicate in a few words by what process one may succeed in discovering the presence of hysteria in difficult cases.[2] It is not the object of this lecture, and besides the physicians who attend this clinic are experts in this matter.

My intention in returning to a subject, many times treated by M. Charcot, is to remind you of the truth, with which it is indispensable to be thoroughly familiar, that the domain of hysteria is infinitely greater than was formerly believed. It is one of the most frequent nervous diseases. It may attack the child, the adult, or the aged, of either sex, and is a condition which the most diverse causes, moral influences, traumatisms, poisonings, or infections are liable to provoke.

One might almost say that hysteria is, after neurasthenia, the path by which a patient subject to hereditary accidents may enter more easily the neuropathic family. The contagious and epidemic nature of certain hysteric accidents, of rhythmic chorea in particular, seem to one to corroborate this opinion, which, besides, does not prevent in any way the admission of the considerable influence of hereditary predisposition in the development of nervous trouble.

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[1] Upon this subject, see Leçons Cliniques sur l'Hysterie et l'Hypnotism, par le professeur Pitsis, 1891.

[2] See upon this subject my memoir upon Hysterical Ophthalmic Migraine (Arch. de Neural., No. 60), in which I have sought to establish the principles in which one ought to be founded to arrive at a diagnosis in such a case.

Permit me, gentlemen, before finishing this discussion of hysteria, to remind you: 1st, that motor paralyses, contractures, and anæsthesias constitute the most common somatic manifestations of this neurosis, and that these accidents are liable to appear and disappear rapidly; and, 2d, that the exaltation of suggestibility constitutes perhaps, from a psychic point of view, the most striking characteristic of hysteria, which is not saying, however, that hysterical phenomena are always of suggestive origin. These are ideas which I shall dwell upon shortly.

To make you understand clearly in what hypnotism consist, I am going to present to you first a patient who is susceptible of being plunged into a hypnotic state so clear and distinct from all other similar conditions that no one would think of contesting its nature; I will in this way bring out its characteristic features.

Here is a patient in whom you can recognize the phenomena of profound hypnotism such as M. Charcot has described.

I will not try to demonstrate to you that the division of hypnotism into three distinct states: lethargy, catalepsy, and somnambulism is legitimate, nor to prove that hypnotic phenomena may sometimes be developed by means of suggestion. There is no lack of proofs, but I have already given them at length in my memoir of profound and light hypnotism to which I refer those of my auditors who are interested in this subject. Besides such a demonstration is not necessary for the end which I now have in view.

I wish simply to call your attention to the facts of which no one doubts the existence, any question of interpretation being dismissed. Let us, then, pass in review the most striking features of hypnotism in its typical forms. 1st. The spontaneity of the "subject" appears much enfeebled. The patient whom you see here, who in a normal condition is lively, alert and somewhat turbulent, becomes calm and taciturn when she is hypnotized. In lethargy or in catalepsy her activity seems entirely abolished and much lessened in the somnambulic period.

This young girl who sits before you seems, as you will easily observe, indifferent to what is going on about her, and she will remain indefinitely in that attitude without changing position, without speaking, unless I interfere and bring her out of her torpor.

I add that the patient has no delirium, and that in this condition she does not develop spontaneous hallucinations.

2d. Suggestibility is notably increased. The patient is more obedient than ordinary and submits voluntarily to orders which she would rebel against with energy were she waking.

I can inspire her with ideas which disagree with what very simple reasoning or immediate observation show to be true. I tell her, for example, that the church of la Salpêtrière was destroyed by a conflagration a week ago, and she immediately admits the reality of an event which she would not have been ignorant of had it occurred. She accepts without criticism the ideas advanced before her, however impossible they may be.

It is, then, possible to develop in her case sensorial, visual, auditive, olfactory, and gustatory hallucinations. I tell her that she is in a garden, that there are beautiful flowers upon the banks of a stream; the patient acts as she might do if the object of the hallucination were really there; she looks at these supposed flowers, bends, plucks them, and forms a bouquet of them; she then dips her hands in the water of the imaginary stream and sprinkles the flowers. I then tell her that before her there is a cage of beautiful warbling birds, her eyes are then directed toward the point which I designate, her face expresses satisfaction, and she remarks upon the birds at which she is looking. I then make her see a fictitious serpent; frightened, she cries out and flies from the creature which frightens her. I cause her to pass successively from one dream to another, and she presents in these diverse circumstances a natural physiognomy and attitude which corresponds to the situation in which she believes herself to be.

3d. Somatic phenomena may also be made to appear, anæsthesias, relaxed paralysis, contractures, cataleptic plasticity, either by mechanical excitations or by suggestion.

I should call your attention, gentlemen, to the fact that we are in some sort masters of the phenomena which we develop, and that we can cause to disappear at our will somatic and psychic troubles which we thus create.

4th. The patient is in a second state. She forgets, in fact, upon awakening what has passed; she has lived during that time that she was hypnotized a separate psychic existence, of which she loses the remembrance when she returns to the normal state.

The patient always executes when awake the orders given during the hypnotic sleep, and preserves for a greater or less time the ideas and images which have reached her mind by suggestion.

Such is the typical form.

Each of the characteristics which belong to it may lose its clearness or become completely effaced; from this arise the aborted forms of which the varieties may be multiplied at will. Among the characteristics which we have just mentioned, all are not of the same importance. We will see which are the ones whose presence is indispensable and without which, according to our view, the reality of hypnotism cannot be affirmed.

We have just seen that in perfect hypnotism the patient is in a second state. But in the aborted forms the patient may retain upon waking a remembrance more or less complete of what has been said and done while she was asleep. Forgetfulness upon awakening is a characteristic which may be wanting, and of which the presence should not be required before admitting the reality of hypnotism. At the same time it should be observed that in such cases the other characteristics are also most frequently less accentuated.

The spontaneity of the individual is lessened, as we have stated. The patient whom I presented before you seemed inert and passive. This is not always true;

some hypnotic somnambulists are lively and active. Nevertheless there exists in each case a more or less marked diminution of spontaneity. Besides, in legitimate hypnosis the patient does not create delirium or hallucinations from his own forces; this is an essential, negative characteristic, connected with, or preceding.

The exaltation of suggestibility constitutes the fundamental characteristic of hypnotism.

But it must not be supposed that hypnotics are, as has been said, completely at the mercy of the experi menter. The great hypnotics themselves are not always perfectly docile, especially when it is desired to compel them to acts which are repugnant to them. The degree of suggestibility varies notably according to the subject himself. There are subjects who revolt when ordered to do something contrary to their principles, or who refuse to submit to injunctions which are not agreeable to them.

Certain subjects, while appearing more credulous than in a waking state, do not accept the ideas which are suggested to them if they are too much in disaccord with what good sense indicates. Finally, many hypnotics are far from being as susceptible to sensorial hallucinations under the influence of suggestion as the typical subject.

From this point of view there is a series of cases intermediate between the state of perfect hypnotism and the waking state.

Nevertheless it occurs to me as essential to indicate with precision the limit which the exaltation of suggestibility should attain in order that it may be legitimate to admit the individual under observation is hypnotized.

It seems to one also that it is a main point to seek as an indication of this exaltation a characteristic, the reality of which may be scientifically demonstrated. This leads me to attempt the study of somatic phenomena.

Contractures and cataleptic plasticity in particular have a fundamental importance, because of the doubts which one must often have of the sincerity of the subjects experimented upon. Messrs. Charcot and Richer have, in fact, demonstrated by the aid of graphic methods that these phenomena cannot be simulated, while it is very difficult, if not impossible, to establish with scientific rigor the reality of the psychic troubles of which we have just spoken.

Relaxed paralysis and anæsthesias present, from the point of view of absence of simulation, a less complete guaranty. They are, in that regard, intermediate between contractures and catalepsy and psychic phenomena. Like the last they are subjective up to a certain point. When the subject, whose integuments I pierce with a needle or upon whose members I exert an energetic pressure, tells me that he experiences no sensation, the reality of this trouble does not appeal to my mind with so much force as when it is a question of contracture; in the first case I am obliged to add faith in the word of the patient, in the second I can dispense with it. It is always possible when an anæsthesia is well marked to demonstrate this objectively in some indirect way. This is a means of doing it. The subject being experimented upon pretends, for instance, that his skin is entirely insensible; I apply, unexpectedly, a piece of ice to his back and observe the patient with attention. If he remains impassible and does not show on his face that he has felt this sudden impression, I have an almost absolute proof of his sincerity. It is also possible to assure one's self by indirect means of the reality of a relaxed paralysis of psychic origin.

Thus somatic characteristics have a capital value, for they place the experimenter beyond the reach of deception, and when they can be made to appear and disappear at suggestion, one is right in affirming that the suggestibility of the subject is exalted.

I do not think, however, that it is necessary to require the union of all the somatic phenomena which we have enumerated before admitting that a subject is hypnotized; the existence of two or three among them, or of even one, provided it is well marked, seems to me to suffice.

Do I mean by this that I accord no importance to the psychic manifestations that I have shown you and that the somatic phenomena are the only ones which should be taken into account? By no means. If I were observing, for instance, a patient in whom I could develop sensorial hallucinations by suggestion, as in a typical case, but who did not present somatic manifestations; if in such a case I had every reason to believe in the sincerity of the subject in question, I should willingly admit that I have done this with hypnotism. We must not exaggerate the rôle of simulation and find simulators everywhere. But in such a case if the rigorous test should fail, I should have at best only great probabilities.

Besides, observation seems to me to show that, in the hierarchy of troubles which may be provoked by suggestion, somatic phenomena, except perhaps catalepsy, which is rarer, occupy the least elevated rank. Thus it will generally be easier to develop an anæsthesia or a contracture by suggestion than to cause the acceptance of an idea which is not in accord with elementary logic, or to provoke a sensorial hallucination.

When somatic manifestations are wanting, one finds himself in one of the following situations: (*a*) Either psychic phenomena themselves are vague, and this is most often the case, the subject is simply in a state of torpor which may be, strictly speaking, considered as hypnotism in its earliest state, but which may also be compared to that state of obnubilation more or less pronounced which precedes natural sleep; or it may be attributed to simulation. Nothing authorizes the statement in such a case that the subject is hypnotized. (*b*) Or the psychic phenomena are very clear, which is very exceptional. Without having the right to reject catagorically the reality of hypnotism, it is proper to remain in doubt, especially when it is an expert medico-legal opinion.

It seems to me legitimate from the preceding remarks to require before admitting that the subject is hypnotized, that it be possible to cause the appearance in him, by suggestion, of at least one of the somatic phenomena above enumerated and to cause it to disappear by this same method of procedure.[3] One would have thus at the same time a proof of the absence of simulation and a criterion of the exaltation of suggestibility which constitutes the chief characteristic of hypnotism.

I am now going to present to you two patients whom you can compare as to their type and in whom hypnotism exists in an aborted form.

Here is a young girl named S., of whom I shall have occasion to speak to you later. I put her to sleep by ocular pressure. In this condition she cannot open her eyes; she remains inert, without moving or speaking; by suggestion it is possible to provoke contractures, relaxed paralysis and anæsthesia, and to afterward cause them to disappear. I have now been able to cause the appearance of cataleptic plasticity; the patient is quite rebellious to efforts made for the purpose of developing psychic troubles, sensorial hallucinations, and seems to preserve all her good sense when she is hypnotized; finally, upon waking, remembers only in part what has passed during the hpynotic state.

As to the second patient, whom you see here, named N., of whom I shall also speak to you shortly, I put him to sleep by fixing the eyes. His eyes are closed and he is incapable of opening them; he preserves silence when he is not questioned, but as soon as he is questioned he responds with facility, and can sustain a conversation as well as in the normal state; psychic troubles are completely wanting, and in this regard his suggestibility does not seem exalted; but it is possible to provoke a contracture by suggestion, which he will keep upon waking if care is not taken to cause it to disappear during the hypnotic period; relaxed paralysis can be developed in him, but it is very difficult to render him anæsthesic; finally, upon waking, the patient remembers perfectly, to the least details, all that has passed.

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[3] In a memoir upon le grand et le petit hypnotism, the part given to hypnotism without somatic characteristics may appear greater. It is not that my opinion has been modified in this respect. The difference consists in that, in this work, contractures and cataleptic plasticity are the only somatic phenomena which I have taken into account, while to-day it seems to me preferable to add to it, as has been seen, anæsthesia and relaxed paralyses.

You have seen hypnotism in its most perfect form in the first patient, and in its least perfect form in the last subject, and in the intermediate form in the young girl whom you have just seen.

If you admit this conception of hypnotism, if you accept this criterion which I propose to you, you will not be led into error, and you will not confound hypnotism with psychic conditions bordering upon it: natural sleep, somnambulism, epileptic somnambulism, hysteric sleep, and hysteric somnambulism. I can present before you a specimen of the last variety of somnambulism, which M. Charcot has already shown you in one of his last lectures.[4]

We here have to do with a patient presenting complete signs of hysteria, and in whom the following phenomena may be provoked: By fixing his eyes, he closes his eyes, and falls over back suddenly, stiffens the limbs, and executes several violent movements in the arc of a circle, characteristic of hysterical attacks; then he opens his eyes, his limbs become supple and in a normal condition, he is taken with delirium, and has hallucinations which develop spontaneously.

An inattentive observer might think he had to do with hypnotism, because the nervous troubles in question appear under the influence of manœuvers similar to those employed to produce the hypnotic sleep. It is an hysteric attack, which is proven by the violent movements in the arc of a circle, the delirium which does not belong to hypnotism and the impossibility of suggesting at will to the patient who is quite in his proper frame of mind.

Observe, however, that if I persevere for a long time in my injunction, he ends by yielding, but only to a certain extent, showing always his spontaneity. I show him, for instance, a sheet of blank paper, and tell him it is a sketch of a model horse, of perfect beauty. He does not answer at first, and seems not to understand what I say to him; I insist; he listens, but contests absolutely the exactness of my statements; I insist again, and he ends by, if I persevere, admitting the existence of a sketch on the paper that I show him, but he adds: "That a beautiful horse, come now—it is an apocalyptic beast." If he accepts my statement completely, this would be, in any case, only the subject of a theme which he will develop. "That a handsome horse," said he; "yes, it is a black horse. We are at the review then? *Vive le genéral!*" etc. If I seek to provoke in this state a contracture by suggestion, I can sometimes succeed in it, but cannot suppress it at will, and I am not master of the somatic and psychic phenomena engendered by my suggestion. The phenomena which belong to somnambulism predominate then; at most it can be said that hypnotic properties exist in germ.

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[4] See upon this subject Progrès Médical, 1891, Nos. 20 and following. A Record of the History of Somnambulism, by G. Guinon, according to the lessons given by Prof. Charcot.

Let us add that when the patient has returned to his normal condition, he has completely lost the remembrance of what has passed in the access of somnambulism.

(*To be continued.*)

EPILEPTIC MANIFESTATIONS RESEMBLING WRITER'S CRAMP.

Dr. Féré (Gaz. des Hôpitaux) speaks of a patient in whom the epileptic aura took the form of a cramp similar to that seen in writers.

The manifestations become general, so that the attack soon resembles one of ordinary epilepsy.

As soon as the attack is passed he is able to write again, which renders the differential diagnosis easy, since this could not be the case in true writer's cramp. The bromides, when given, produced marked improvement.

W. F. R.

THE SURGICAL TREATMENT OF EPILEPSY.[1]

By JOSEPH PRICE, M.D.

EPILEPSY is defined as an apyretic nervous affection, characterized by seizures of loss of consciousness, with tonic or clonic convulsions. Its history, from a therapeutical standpoint, is one that has taxed the efforts of supremest superstition and defied the resources of scientific medication. Its treatment has been one of trial and disappointment, for it still remains one of the greatest opprobria of medicine.

Its attacks are visited upon both sexes, while hystero-epilepsy is for the most part confined to females. These it attacks when a marriageble age is reached. Debauchery leads to it. Young widows are prone to it, and its origin outside of physical causes may be traced to amorous songs and certain stimulants, such as chocolate and coffee. For its cure various suggestions have been made to resort to venery, while on the other hand it has been abundantly proven that excessive lust has produced it, and is no doubt yet to be recognized as a great factor in its causation. Case after case is cited where death has occurred after sexual indulgence from this cause. That it is transmissible does not admit of dispute, any more than it is caused by traumatism, and hence its relief by operation to remove the results of traumatism is logical and often successful. In women, efforts in a surgical way have long been tried for its relief. The operation of clitirodectomy brought Baker Brown into disrepute, and we have to-day no less a person than Lawson Tait boldly expressing the opinion that there is doubtless a place for the operation. But the belief that a moral element must be reached in addition to the physical interference is no doubt justified by the facts. One table

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[1] Read before the New York Neurological Society, February 2, 1892.

I have consulted gives as high as 73.7 per cent. of cases cured of masturbation by clitirodectomy. This surely makes it not presumptive in its claims for recognition.

Epilepsy in women appears to be more fatal than in men. The acquired epileptic habit is more fatal than the congenital. In the congenital it is two to one; in the acquired it is three or four fatalities in women to one in the man. As to the inheritance of the disease, it is sufficient to note that among epileptics marriage should be discouraged. The history of eunuchism as a preventive of epileptic propagation, and also the edicts forbidding their marriage, are of interest to the student of law as well as to the theologian and physician. So much for the history of the disease, which can only be briefly referred to. We must hasten on to the surgical consideration of the subject. In epilepsy proper, the history of surgery must form an essential part of the history of epilepsy. Tracheotomy was urged by Marshall Hall and others on the ground that many convulsions began in and were limited to the larynx. The relation of otitis to the causation of epilepsy has also been studied, and found to be not inconsiderable, while foreign bodies in the ear have also been studied as a cause. In the male the operation of circumcision is often beneficial. Neuromata have been excised, scars excised, and amputations done. In the male, from an early date, emasculation was performed as a remedy for the disease. The arteries have also been attacked to cure the disease, as witness the ligation of the vertebrals and carotids. This operation has been accompanied by no little success, and is admitted by Gowers often to be efficient. Nerve stretching as a remedy, in a few cases, has given good results, while operation has been declared justifiable in a majority of reflex epilepsies. Among these may be reckoned circumsion in phimosis. Gowers gives unqualified expression to the opinion that circumcision should always be done when masturbation is associated with epilepsy. The relief afforded by circumsion is in direct relation to the youth of the patient. In epilepsy, then, we have the two treatments recognized, medical and surgical, and in both we must strive to remove the cause, check convulsive tendency, prevent further attacks. It is evident that in traumatic epilepsy surgical interference is most likely to avail, perhaps seconded by medical treatment.

In entering upon the consideration of the removal of the appendages in women for the cure of epilepsy, it is unnecessary to take up in detail the history of castration as practiced on the male for the same purpose. Suffice to say that the history of this operation, both from a priestly standpoint and from a carnal or musical standpoint, is often instructive and oftener *horrifying*. The mortality has often been simply terrible; while the practice, so far as mutilating children to preserve their voices for song, marks an era of refined religious cruelty scarcely conceivable. So far as the surgery of the disease is concerned, in a general way, *operation* has the best of the *argument*. Out of seventy-one cases treated medically, and out of a second series of seventy-one treated surgically, the statistics as exhibited in my collection, the advantage is all with the surgical treatment, as in these four all were at least benefited, while in the medical series a great proportion showed no effect at all, and some grew worse. The exact percentage some one may calculate who has a greater taste for such work than I. In a general surgical way, then, if operation is beneficial when it can be directly traced to the ovaries or their diseases, logical deduction would seem to indicate that beneficial results may at least be hoped. So far as unsexing an epileptic is concerned, I do not understand how or why there is reason to feel compunction at such a suggestion. I can hardly question the protective value to society, not only of forbidding epileptics to marry, but of rendering them unable to procreate. A wise legislation would of course be needed to prevent abuse; but the essential right of society to protect itself ought not to be questioned. But until we are sure that the ovaries are in any wise connected with the epileptic seizure under the present discussion, the operation is not to be entertained, because now we are seeking a cure. Looking at the patient from a surgical standpoint, we must reason from cause to effect. If we find in any epileptic well-marked pelvic disease of any kind whatever, I take it that the patient should be given the benefit of an only chance for cure; that is, I take the stand in this disease that I hold in all other surgical trouble, that where there is actual pathological condition we should remove it, surgically, if necessary; medicinally, if we can.

Now, going aside from actually demonstrable disease, what are we to do in the presence of epilepsy where disease is doubtful? If we have an unmarried woman in whom every menstrual period from the initiation of her puberty to the time that she comes under our care is marked by an epileptic seizure, who at other times is entirely free from the attacks and shows no tendency to fall into them, who recovers as soon as the period is over and who has no other demonstrable or probable cause for her seizure than her monthly irritation, it seems there is little doubt that operation is justifiable; but unless we can thus pin down the seizure to definite time and cause, I hold it wrong to burden surgery with a class of cases that can only fail to detract from its good name, while it does no possible good to the individual. Observe this is not contradictory to my expressed opinion as to the ethical advisability of the operation. With that we have now nothing to do. Until society recognizes the advisability of such procedure and law its equity, we cannot consider it as applicable only in an extremely limited number of cases.

Now, going over to the married state, where our ground is often plainer than in the single, how shall we be guided? I have said our way here is sometimes clearer as to operative interference, and let us see how this is. Take a woman who previous to marriage has been an epileptic, and in whom this condition continues until she becomes pregnant. Her fits now suddenly cease and only make their reappearance after childbirth and when lactation is over, when they become again as frequent as ever. Here we are advised, first, that the pregnant period has abated the disease, and that the period of lactation has also been powerful to restrain them, and that, consequently, since in both the menstrual flux is absent, it has been at the bottom of their cause, since at its return there is a renewal of the epileptic attacks. In such a case as this there would seem no reasonable ground for believing that operation would be justifiable. Aside from conditions such as these and the presence of actual disease, I see no place for the operation. However, if we arrive at conclusions such as these by inference, the results of operation are the measure of the extent to which such procedure is to be applied. Reasoning along this line, attack of dysmenorhœa accompanied by epileptic seizure should be considered amenable to the same treatment, and tested by their success in relieving or curing the attacks. In case of dysmenorrhœa of any origin, all effort outside of operation should, of course, be made before the latter is resorted to. A real obstructive dysmenorrhœa, for instance, should be treated by dilatation or whatever mechanical device that can best overcome the obstruction. Out of nine cases I have collected, in which hystero-epilepsy was present from various causes with definite well-defined lesion under the rules that I have laid down as the proper ones to follow, all but one were cured, and in this it is doubtful whether the operation was complete. If ovarian disease is the cause of the epileptic seizures, it is of no use to do a partial removal and expect results, relief, or cure. It is bad surgery, badly executed, and as ridiculous as to attempt to cure a bleeding fibroid by the removal of a single ovary and tube. The effect obtained may be due to either one of two causes. First, to the removal of an irritable organ, or a diseased one in many cases, whose presence stirs up the reflexes into a commotio. Or, again, the relief may be due to the excitation by operation of a different epilepto-genic zone, as it is laid down by Charcot as a principle that irritation of one epileptic zone may be relieved by irritation or pressure upon

UNCLASSIFIED TABLE OF CASES OF EPILEPSY TREATED MEDICALLY AND SURGICALLY.

REPORTER.	CASE.	CONDITION IN LIFE.	OPERATION.	TIME.	CAUSE.	RESULT.	PLACE.	WHEN REPORTED.
Gowers	1	Man, 26	Zinc		Epilepsy	Recovery	England	Epilepsy, etc., 276
"	1	Boy	Quinine		"	"	"	" " 276
"	1	Man, 35	Brom., bella., zinc.		"	"	"	" " 278
"	1	Girl, 20	Pot., etc.		"	"	"	" " 279
"	1	" 10	Brom., etc		"	"	"	" " 279
"	1	" 8	Iron and brom.	1878	"	"	"	" " 279
"	1	" 17	Bella. and brom		"	"	"	" " 279
"	1	Woman, 48	Brom.		"	"	"	" " 280
"	1	Man, 23	Perch. of iron		"	"	"	" " 280
"	1	Girl, 21	Steel and digitalis		"	"	"	" " 281
"	1	Man, 32	Borax	1878	"	"	"	" " 281
"	1	Girl, 14	Bromide.		"	"	"	" " 282
"	1	Boy, 17	Gelsem. and borax.	1877	"	"	"	" " 283
"	1	Girl, 16	Cocculus Ind.	1880	"	"	"	" " 285
West	1	Boy, 10	Abscess burst from fall on head.		"	"	"	Diseases of Infancy and Childhood, 215
Gowers	1	Girl, 16	Picerotoxine.	1880	"			
Ramskill	7		Operative		"	Worse		Ibid.
Agnew	1		Trephining.		"			Phila. Med. Times, 1878, p. 578
West			"	1880				Med. Chir. Trans., 1880
Lees and Bellany			Ligature above elbow	1881		Cured.		Clin. Soc. Trans., 1881
Gowers			" " "		Traumatic epilepsy.	"		Gowers' Epi., etc., p. 286
"			Extension of cont. muscles.			Cured. Fits stop at sight of ligature.		" " " 286
Aretaus			Extension of cont. muscles.			Cure.		Syd. Soc. Trans., p. 244
Lysons			Ligature.			"		Pract. Ess. upon Intermit. Fevers, 1772
Trullianus			Issue about parts			Arrest, cure		Gowers' Epi., etc., p. 287
Buzzard			Circular blister			Relief.		Practitioner, 1868; Gowers' Epi., 288
Nothnagle			Swallowing salt			Arrest.		" " 288
Gowers		Man, 26	Amyl			Relief.		Gowers' Epilepsy, p. 289
"			No animal food.			Attacks more frequent and severe.		" " 291
D .G. Fisher		Woman, 18	Marriage	1862		No improvement		
Gowers		Boy, 12	Iron			Relief.		Gowers' Epilepsy, etc., 292
"		Girl, 18	Iron, etc.			"		" " " 296
"		Boy, 15	Turpentine.		Hysteroid.	Cured post-renal colon		" " " 546
"		Girl, 25	"			Improvement.		" " " 156

TABLE OF CASES OF EPILEPSY

No.	Reporter.	Case.	Condition in Life.	Treatment.	Time.	Cause.
1	Harles	1		Arsenic		Epilepsy
2	Alexander	1		"		"
3	Duncan	1		"		"
4	Hoffman			"		"
5	Le Maitre	1		Anæsthetic		"
6	Trousseau	3		Atrop. Arg. Nit., etc.		"
7	M. Broster		Woman, 25	Apomorphia		" Hysteroid
8	"	1	Woman, 23	"		" "
9	Gleding	3		Belladonna		"
10	Leuret & Ricard	22		"		"
11	Munch	Sev.		"		" Fright
12	Bretonneau	A few		"		"
13	"	A No.		"		"
14	Trousseau	Some		"		"
15	"	Many		"		"
16	"	A No.		"		"
17	Gowers	4		" Bromide		"
18	"	1	Girl	" "		" Chorea
19	"	1	Boy, 16	Bromide-Atropia		"
20	Paget	1	Man, 16	Brom. Bism. Magn.		" Gastric
21	Dijoud	1		Borax		"
22	"	18		"		"
23	"	6		"		"
24	Gowers	7		Brom. Potass.		"
25	"	6		" and Digitalis		"
26	"	4		" "		"
27	Williams	30		Brom. Potass.		"
28	"	7		" "		"
29	Black	1		" "		"
30	Bazin & Besnier	3		" "		"
31	Voisin	4		" "		"
32	"	16		" "		"
33	"			" "		"
34	Thomas	8		" "		"
35	"	8		" "		"
36	"	8		" "		"
37	Gowers	1	Man, 40	Canabis Indica		"
38	Trousseau	1	Man, 20	Tr. Cantharides		"
39	Anstie			Cod-Liver Oil		"
40	Trousseau			Curare		"
41	Paget	1		Digestants—Purgatives		" Hereditary
42	"	1		Bismuth and Magnesia		" Gastric
43	Locock	14		Brom. Potass.		"
44	"	1		" "		"
45	Gowers	1	Boy, 13	Turpentine		" Traumatic
46	Herpin	4		Copper		"
47	"	26		Zinc		"
48	"	16		"		"
49	Paget	1		"	1852	" Gastric
50	"	1	Boy, 13	"	1858	" " Irritation
51	Moreau	9		Zinc Ox.		"
52	Kroon	3	Under 16	" Lac.		"
53	"	11		" "		"
54	"	6		" "		"
55	Gowers	2	Man	"		"
56	"		Girl	"		" Hysteroid
57	"	1	Boy, 14	Gelsemium		"
58	"	1	Girl, 13	Morphia		" Fright
59	Kolk	1	Man	"		" Gastric irritation
60	Storck	2		Stramonium		"
61	Odhelius	8		"		"
62	"	5		"		"
63	"	1		"		"
64	Trousseau	4		Quinia		"
65	"	2		"		"
66	Panaroli	1		Valerian		"
67	Kroon	1		Atropia Valer.		"
68	"	15		" "		"
69	"	18		" "		"
70	Trousseau	6		Brom. Potass., small doses		"
71	Herpin	8		Copper		"

SUBJECTED TO MEDICAL TREATMENT.

RESULT.	PLACE.	WHERE REPORTED.
Cure	France	Trousseau's Treatise on Therap., i., p. 176; Harles, p. 324
"	England	" " " " "
"	Scotland.	" " " " "
"		" " " " "
"		" " " iii., p. 29
Improved.		" " " iii., p. 337
"		Gowers' Epilepsy, p. 299
Cure		" " "
Relief.		Appar. Med., i., p. 646; Murray-Trous. Tr. on Ther., ii., 238
"		Gaz. Med., 1838, No. 12
Cure		Trousseau's Treat. on Therap., ii., p. 238
"		" " " "
Relief.		" " " "
"		" " " "
Improved.		" " " "
Failures.		" " " "
Cure	England	Gowers' Epilepsy, p. 270
"	"	" " p. 271
"	"	" " p. 272
"		Lancet, April 18, 1868, p. 493
"		" "
Relief.		" "
Failure		" "
"	England	Gowers' Epilepsy, p. 257
Cure	"	" " p. 265
Improvement.	"	" " p. 265
"	Northampton	Trousseau's Tr. on Therap., iii., p. 336
Failure	"	" " " iii., p. 330
"		Dublin Quarterly Med. Sci. Jour., 1864
Cure		Gaz. de Hopit., 1865
"	Bicetre	Trousseau's Treat. on Therap., iii., p. 307
Improved	"	" " " "
Failure	"	" " " "
Cure	Sedan.	" " " iii., p. 340
Improved	"	" " " "
Failure	"	" " " "
Cure	England	Gowers' Epilepsy, p. 273
"		Trousseau's Treat. on Therap., p. 337
"		Brit. Med. Jour., March. p. 631
Failure		Trousseau's Treat. on Therap., iii., p. 280
Cure		Lancet, April 18, 1868, p. 491
"		" " " p. 492
"		" May 3, 1857, p. 528
Failure		" " "
Cure		Gowers' Epilepsy, p. 207
"		Flint's Practice of Medicine, p. 832
"		" " " "
Failure		" " " "
Cure		Lancet, April 18, 1868, p. 491
"		" " " "
"		Moreau's Epilepsy
"	Amsterdam.	Dissertation on Epilepsy, Kroon, 1859, p. 92
Improved.	"	" " " " "
Failure	"	" " " " "
Cure	England.	Gowers' Epilepsy, p. 274
"	"	" " "
Improved.	"	" " p. 273
Cure	"	" " p. 274
"		Kolk. Spinal Cord and Med. Oblong., p. 275
Improved.		Libellus quo demonstratur stramonium, etc., Trous., ii, 251
Cure	Stockholm	Trousseau's Treat. on Therap., ii., p. 251
Relief.	"	" " " " "
Failure	"	" " " " "
Improved.		" " " iii., p. 337
Failure		" " " "
Cure		" " " p. 339
"		Dissertation on Epilepsy, Kroon, Kolk Spin. C, and M. O., 281
Improved.		" " " " " " " p. 75
Failure		" " " " " " "
"		Trousseau's Treat. on Therap., iii., p. 337
		Flint's Practice of Med., p. 832

TABLE OF CASES OF EPILEPSY

No.	Reporter.	Case	Condition in Life.	Operation.	Time.	Cause.
1	Sernin	1	Priest	Castration		Epilepsy—Relig. Mania
2	Remondino	1	Ship's cobb'r	"	1871	" Continence—R. Mania
3	Sprengle	1	Old man	"		" Inordinate desire
4	Sir A. Cooper.			"		" Dis. testes
5	Curling.	30		"		" " "
6	Rooker			"		Epilepsy
7	Ogle	7		"		"
8	Bacon.	8		"		"
9	Spinnelli	1	Boy, 15	Trephining		" Trauma
10	Leo			"		"
11	Burnett & Gould	1		"		" Idiopathic
12	Warren.	1		"		" "
13	"	39		"		" "
14	Saxtroph	1		" No trauma		"
15	Echeverria			" Trauma		"
16	Sayre	1	Boy, 16	Circumcision		" Reflex
17	Battey	1		Normal ovariotomy		"
18	Tait.	3		" "		" Menstrual
19	Baker Brown			Clitoridectomy		"
20	Nussbaum	1	Man	Nerve stretching		"
21	West			Burst of abscess		"
22	Stevens.	1	Man, 37	Tenot. of ocular muscles		"
23	Larrey	1	Old soldier	Rem. of necrosed bone	1836	"
24		1	Boy, 8	Excision of cicatrix		"
25	Franz Rheins.	1	Locksmith	Steel splinter from hand	1878	"
26	Schurig.	1	Boy, 11	Foreign body in ear		"
27	Von Thaden	1	Woman, 31	Exc. syph. ulcer l. leg	1875	"
28	Brubaker	16		Diseased teeth		"
29	Griffiths	Sev'l		Seaton		"
30	Kolk	1	Boy, 17	Issue on head	1845	"
31	"	1	Boy, 18	Issue, and med. treatment	1855	"
32	"	1	Governess, 25	Seaton	1852	"
33	"	1	Man	Leech-cup—Med. treat.	1854	"
34	Vrolik	1	Young man	Cup-blister		"
35	Greenhow	1	Girl	Splinter from under thumb		" Traumatic
36	Baly	1	Man, 45	Tooth-socket treated		" Irritation
37	Portal.	1	Man	Shot from abscess		" Trauma
38	"	1	Soldier	3 shots rem. from thigh		" "
39	"	1	Man	Point of sword from eye		" "
40	Kolk	6		Actual cautery	1823	" Old
41	"	1	Man, 17	" "	1823	"
42	Green.	1		Cautery to larynx		"
43	Recamier.	1		Cautery to larynx—blister		"
44	Parsons	1	Man, 25	Blist. (met. pl.) neck, knee		"
45	Beveridge	1		Fall in fire		"
46	Sproule			Burns		"
47	Bonygues			"		"
48	Reese			"		"
49	Pearson			"		"
50	Langewicz			"		"
51	Aubanel	1	Man	Amp. left arm		"
52	"	1	Woman	"		"
53	W. Atlee	1	Woman	Amp. r. forearm and hand		"
54	Cazenave	1		" of leg		"
55	Lallemand			" l. index finger		"
56	Colson	3		Phlebotomy		"
57	Mott	1		Lig. of left carotid		"
58	Preston	1	Man, 25	Lig. of carotid		"
59	Angell			" of common carotid	1831	"
60	Albers	1		Tracheotomy		"
61	Neill			"		"
62	Alexander	3		Lig. of vertebral artery		"
63	"	9		" " "		"
64	"	8		" " "		"
65	Gray	7		" " "		"
66	Baracz	4		" " "		"
67	Wilson	1	Girl	Ovarian compression		"
68	Charcot	1	Woman	" "	1879	" Hysteroid
69	Henoch	1		Compression of carotids	1878	" Hyster. r. ovar. hyperæsthesia

SUBJECTED TO SURGICAL TREATMENT.

RESULT.	PLACE.	WHERE REPORTED.
ure	France	Dict. des Sci. Med. liv., p. 570
"	Am. war ves.	Castration. Remondino, p. 89
"		" " p. 92
"		Dis. of Testes. Cooper
"		" " Curling
"		Cincin. Lancet and Obs., 1861–62–68
"		London Lancet, 1859, l., p. 156
"		Jour. Men. Sci., Oct., 1880
"		Il Filiatri Sebezio, April, 1845
		Pepper's Sys. of Med., v., p. 502
elief		Brit. Med. Jour., 1888
"	Boston	Surgical Obs., with cases, 1869
ure	"	" " " " 1867
"		Ann of Univ. Med. Sci., ii., 1890
"		Les Arch. Gen. de Med., ii., 1890
"		Med. Rec., New York, 1870, p. 233
"		Western Med. Rep., July, 1890, p. 145
"		Man. of Gynæc. Hart and Barbour, ii., p. 203
"		Ins. Epi. Hysteria in Females (Baker Brown) W. M. R., 6–90, p. 145
"		Dis. Chir. Klinik zu Munchen im Jahre, 1875
"		Dis. of Children, West, Amer. Ed., p. 181
"		Funct. Nerv. Affections, p. 113
"		Lancet Franc., No. 18, 1836
"		West. Med. Rep., July, 1890, p. 143
"		Alg. Med. Cent. Zeitung, xlii., p. 23, 1878
"		Zahresb. d. Ges f. natur und Heilk. zu Dresd., p. 69, 1877
"	Hamburg	Deutsch. Zeitsch., p. 520, 1875
"	Philadelphia	Am. Sys. Dentistry and Jour. Nerv. Dis.
"		Naphey's Med. Therap., p. 53
"		Kolk. Spinal Cord and Med. Oblong., p. 271
"		" " " " " " p. 264
" (7 years)		" " " " " " p. 269
"	Meerenberg	" " " " " " p. 269
"	Rotterdam	" " " " " " p. 269
"		Lanc., April 11, 1868, p. 460
"		" " " "
"		Portal on Epi.
"		" " "
"		" " "
elief		Kolk. Spinal Cord and Med., Oblong., p. 270
ure		" " " " " " p. 271
"		Med. Gaz., iv., p. 98, 1853
"	Hotel Dieu	Bull. d'Therap., Jan., 1844
"		New Eng. Med. Jour., xv., p. 355, 1826
"		Med. Times and Gaz., i., p. 390, 1868
"		Lon. Med. Times, 1844, p. 152
"		Jour. de Med. et Chir. de Thoulouse, 1852, p. 44
"		Phila. Med. and Surg. Rep., 1869, p. 239
"		" " " " " " p. 145
"		Oester Med. Wochenschrift, Wien., 1846
"		Gaz. Medicale de Paris, M., 43, 1839
"		" " " " " "
"		Phila. Med. Times, 1870, p. 224
"		Gaz. des Hopitaux, Paris, xxiv., p. 95, 1851
"		Ann. Clin. de Montpellier, ii., p. 284, 1854
"		Bull. de la Soc. de Med. de Grand., i., p. 19, 1835
"		N. Y. Med. Gaz., p. 120, 1850
"		Schmidt's Jarbucher der Ges Med., Bd. 20, S. 167
"		Northwest. Med. and Surg. Jour., Oct., 1857
"		Archiv f. Phys. Heilkunde, 1852
"		Bos. Med. and Surg. Jour., xlvii., p. 29, 1852–53
"	Liverpool	Lon. Med. T. and Gaz., 1881; Brain, July, 1886
Imp. alm't cure	"	" " " " " " " "
" Oper. justif.	"	" " " " " " " "
Relief		Neurolog. Review, July, 1886
Apparent cures		Wien. Med. Wochenschrift, Feb., 1889
Arrested	Surbiton	Gowers' Epilepsy, p. 159
Inhibition of fits	Salpetriere	Brit. Med. Jour., Oct. 12, 1878
		Bien. Retrosp. Med. and Surg., p. 429; Beitragez. Kind., 1868
Cure		

another. An analytical study of the relation of menstruation to the epileptic attacks in women is one in which much diversity of opinion will be found expressed. In 82 cases cited by Gowers, 7 had no attacks at the menstrual period; 29 had no difference in their attacks at their menstrual period; 46 had an exacerbation of the epileptic symptoms at their menstrual periods; in 17 the attack was worse before the period; in 15, worse during the period; in 4 cases the attacks were much less frequent after the period; 10 cases had the period of exacerbation variable, while 2 had no seizures at times when the menstrual fuction was regular. It requires only a casual glance to decide that operation in certain of these cases would have been more than useless, while in others it would have been of doubtful utility, but in others legitimate. A point not to be lost sight of is the effect of the sudden stoppage of the menstrual flux as a result of the operation. In patients in whom there is no tendency to epilepsy, this sudden cessation of a sexual function is attended with the most annoying symptoms, so that in epileptics we are cônfronted with the problem whether the original epileptic tendency and habit will not have an additional impetus lent to it by the operation done for its cure. As to this I do not believe anything positive can be laid down; for the effect on epileptics in this respect must be just as variable as in women whose nervous functions are normal. In reference to the medical treatment of the disorder, a little may profitably be written to compare it with well-defined indication for surgical interference. Assuming it as a fact that the disease is often a reflex manifestation of a local trouble, it follows that in those diseases in which deposits are found as a result of systemic affection, wherever there is a remedy recognized as efficient in removing such deposit, as in syphilis and rheumatism, this has an identical chance for effecting a cure, as has the knife in well-recognized surgical disease. Surgical epilepsy, we may put down as an axiom, is oftener cured than medical epilepsy, as I have before said. Gowers has given as a result of treatment in 562 cases: complete arrest for a time, while under observation, in 241; improvement short of arrest in 266, *i. e.*, fits reduced; no improvement from any form of treatment in 55 cases. In conclusion, I wish to call attention to a tabulated statement of the results of treated *vs.* operation from a great variety of sources. The results cannot help but be striking in their contrast. Out of a great mass of data which I have gathered I have striven to put forth the essential features of the subject. I will not tax the Society with an extensive bibliography; but trusting to the discussion to bring out points that I have omitted in an effort to be brief, I shall supplement the paper presented by the transmission of my data for whatever use the Society may find for it.

TREATMENT OF NEURASTHENIA.

Dr. R. Perdigo, of Barcelona, has taken up the modern treatment of neurasthenia very thoroughly in the "Gaceta médica catalana," November and December (1891) numbers. In speaking of general massage, the writer believes it useless in those cases which are well nourished, because it predisposes to an exaggerated morbid excitability. In the asthenic cases, when carried out with care and prudence by skilled masseurs, good results may be expected: the circulation is improved, the nutritive processes hastened, disintegration of elements unfavorable and useless to the organism is brought about, and as results the nervous system is stimulated, the appetite is improved and the general condition of the patient is bettered. The author pays homage to American writers on this subject, and from his many references must have been a close observer of American neurology. W. C. K.

INSANITY OF THE PUERPERIUM.[1]

By AMELIA GILMORE, M.D.,

Permanent Resident to the Insane Department of the Philadelphia Hospital.

IT is only in State or City Hospitals for the Insane that puerperal insanity is seen in numbers large enough to form deductions of its general characteristics, for grouping of symptoms and preparation of statistics which will be of benefit in the study of this class of cases. The reasons why this is so are obvious.

The patrons of private asylums will provide home treatment in the case of mania in child-bed, the prognosis being favorable. I have seen no statistics of the relative frequency of puerperal insanity between the rich and the poor, but it is probable that though the physical causes would be nearly equal in the two conditions, the moral causes which would conduce to its production may be increased with poverty, and among the poor when the reason is dethroned the resources of the household are insufficient to provide the necessary care for the unfortunate one, and the public institution is open to her. Of the isolated cases we rarely receive published records, so that no data from this source is obtainable.

As regards the frequency of puerperal insanity as seen in asylums, we find in an English county asylum, corresponding to our State Hospital, out of 2,000 cases admitted there were 59 puerperal cases, or 1 in 34. In Norristown State Hospital, out of 2,500 admissions, 150 were puerperal, or 1 in 17.

Taking the Royal Edinburgh and the Pennsylvania Hospital for the Insane as examples of the best private asylums, we find that out of 332 admissions in the former in 1890, there were but two of puerperal insanity, or 1 in 166; and in the latter in something more than a total of

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[1] Read before the Philadelphia Neurological Society, March 28, 1892.

,500 admissions, there were but 15 of puerperal insanity, r 1 in 300.

In the Philadelphia Hospital, out of 1,470 admissions here have been 34 of puerperal insanity, or 1 in 43.

I think it is not often enough remembered that this hysiological crisis furnishes more patients to the State nd City Hospitals for the Insane than any other period r cause, excepting in hospital statistics the etiological ondescript—"general debility."

Of the 34 cases which I report, in 25 it was the first ttack; in 6 cases it was the second; while 2 of them ave had three attacks, and 1 has been four times insane t the puerperium.

The Results.—Recovered, 20; improved, 2 (taken out y friends); died, 2.

There are 10 remaining: 3 in chronic mania; 1 in tationary mental condition has developed phthisis; the thers convalescing or improved.

Of the recoveries the duration of the illness varied rom two months to four years; and for the length of ime in the hospital from one month and seven days for he shortest case to twenty-eight months as the maximum ime under treatment. And the tables of recovery show hat there is a relation between the early hospital treat-nent and early recovery, the advantage being to those vho are admitted at the onset.

The average time in the hospital has been about six nonths, though one-third of the cases were less than our months under treatment.

Age seems to have some influence also in the prog-iosis. Two-thirds of those who recovered are below hirty years of age, while of those who have not recovered, the most are thirty years old or above it; 7 above hirty to 3 below it is the proportion in this class.

Only one-fourth of the cases were primiparæ. Illegitimacy was a factor in but 3 cases, though in some foreign asylums this is one of the chief causes of puerperal insanity—the rate being as high as 25 per cent. in Dr. Clouston's cases. One had been deserted very soon after her marriage.

Of the forms of insanity at this period, mania was the more frequent, appearing in two-thirds of the whole. while one-third were melancholic, and this is the proportion noted by most observers. Positive delusions were not common among them; a few only believed themselves subjects of persecution. One melancholic believed that she was about to be put in boiling oil, and was always peering about to see the approach of her executioner.

One asserted that she was immortal and would never die. Another believed that it was her duty to pray constantly to guard those whom she loved from the machinations of the devil. One is superior to her surroundings—feeling no ill. Another is weeping over her sins. In general the morbid fancies were of a painful nature. In one case they were hypochondriacal. Mistaken identity was observed in some instances, the patient calling herself by some other name, or thinking that new faces were those of old friends. In two cases they believed the food poisoned.

One denied marriage, and declared that she had no babe. Another threw away her wedding ring. A third believed that her child was "changed" on the third day, another being substituted for it.

Visual and aural hallucinations appear in a large proportion of the cases. Where there is but one such anomaly it is found in the sense of hearing. In one case observed, all the special senses were affected. She saw animals and reptiles, or objects of a repulsive nature, crawling about her. Another saw babes creeping. In neither of these cases was there an alcoholic habit.

Eroticism, which we find spoken of uniformly as a common feature in puerperal insanity, I have found present in but one case, and the patient did not exhibit this phase while in the hospital; but on being taken home before her recovery was established, she gave her family trouble. She thought that every man she met was enamored with her. After she returned to the hospital she would denude herself in the ward.[2]

Of special features which are noted in other forms of insanity as well, I have made these observations:

Anorexia and refusal of food is not uncommon among puerperal cases. It is usually overcome by mild insistence and persuasion. I found it persistent in but four patients and in these nasal feeding was resorted to for a short period in each case.

Pyromania was developed in two cases. In one it occurred in the hospital; in the other, before entrance. When the latter attempted to set fire to the house, she said that she knew that her little children might be burned in the flames, but thought it would be better for them.

Suicide.—Bevan Lewis characterizes the impulsive tendencies of puerperal patients as an "explosiveness," which makes them dangerous to themselves and those about them. My records also show suicidal and homicidal tendencies in a small proportion—9 per cent.

One jumped from the window with supposed suicidal intention, causing fracture of the right femur. Another threw herself from the second story window in a desire "to save sinners," she said. Another attempted to get out of the window to escape pursuers. In both the latter cases the delusion was foremost and so prominent as to make them unconscious of danger to themselves. Neither of these accidents took place in the hospital, but occurred before the patients were brought there. So that it seems possible to prevent them if treatment is begun early.

It is contrary to our custom ever to leave the child alone with the mother, so that we have no instance of injury or abuse to the infant in consequence of insane fury, such as is sometimes recorded. The rule with us is to give the breast to the child so long as it can be done with advantage to both concerned. If either suffers from it we remove the cause. As a rule, the infants born in the hospital, or brought with the insane mother, are puny. A majority die during the first four weeks, others are taken from the breast, for one cause or another, usually before the end of the second month.

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[2] Hammond has found obscenity common even among the virtuously reared, and quotes earlier writers as saying it is so common among them as to be characteristic; also that the mental upheaval is even deeper than in ordinary mania, and it is more apt to be complicated with irresistible impulses and erotic ideas. My experience does not coincide with this, and I think the conclusion may be drawn that the tendency to eroticism is not provoked when the patients are under the medical care of women.

Tests of the number and value of the red blood-cells were made in a few of the cases, and these examinations confirmed the observations of others that the amount of hæmaglobin is notably diminished in most; and that this is true even though the number of red blood-corpuscles is normal, the corpuscular value is not up to the average.

The amount of hæmaglobin varied from .55–.75; and the hæmacytometer in these two cases respectively gave 3,150,000 and 3,990,000 as the number of red blood-cells per c. m. m. In the first case the anæmia was a prominent feature, and it was characterized by religious exaltation, so that she chanted hymns and prayers during her labor. Another case, with the blood count at 4,360,000 per c. m. m., the hæmaglobinometer estimated the value at .70 of the standard of healthy blood.

Albuminuria does not appear as a noteworthy factor. I have observed it in but one of these cases. Coming on two weeks before delivery, it did not persist, but yielded to treatment, and has not since returned.

Subinvolution of the uterus with eversion of the cervical lip complicates one case in which the mania persists beyond the usual period.

As for the prognosis: This subject is of the first consideration generally in these cases, and one which it is desirable early to determine in order to relieve the anxiety of friends. The importance of inheritance is not underrated, and yet where this is unfavorable and there is strong neurotic tendency, or insanity is known to exist in the family, we have still ground for hope, as our recovery-rate in these instances is quite .50.

In general we make a favorable prognosis, as the number of recoveries is large, reaching as high as 80 per cent. in some asylums. In the Philadelphia Hospital there was recovery in two-thirds of the cases, or .66, with some still remaining under treatment, whom it is safe to say will recover, making the rate still higher, as but three cases remain with us in chronic mania.

I have also made some observations as to the spasmodic or quasi-epidemic character of puerperal insanity, as it has appeared in the history of the Philadelphia Hospital in groups of three, five or six, from time to time, and then there may be a long interval in which not a single case occurs. Whether coincident with any public calamity, general business depression, or spread of contagious disease, or whether it is a species of folia communiquèe I have not been able to determine. In 1891 the epidemic did not follow that of the influenza, but preceded it, so that this cannot be added to the charges already made against that hydra-headed monster —la grippe.

The insanity differs little if any from the ordinary mental alienation in the acute stage, when the nutritive value of the blood is impaired; and the nervous elements, being more highly organized than any other and soonest affected by it, are unequal to the demands made upon them.

Sankey, while disclaiming any warrant from a pathological view for speaking of insanity of the puerperium as a special form of disease, yet declares that in the wards at Hanwell he could always point out the cases of melancholia, mania, paresis, imbecility, recurrent insanity, cases of stupor with chronic symptoms, delusions, etc., which commenced during the puerperal condition. Dismissing the fact with the mere statement, he leaves us in doubt as to the special differences he could detect between these and the same forms of insanity occurring under other conditions.

All writers on insanity recognize that there is a peculiar liability to mental disease in the parturient woman, and though it may be in some cases of very limited duration—functional only—producing no lesion, in others it persists for a longer period with alteration of structure.

Early opinion regarded it as an expression of a general toxæmia which too often occurred after parturition —a necessary concomitant of puerperal fever—though there were cases in which there was no sepsis, and these were ascribed to inherited tendency, depressing emotions and anæmia.

The etiological nomenclature is open to objection, yet the name of puerperal insanity presents to every physician a distinct clinical picture which needs no explanation.

It has been classed as a constitutional insanity and made to include the three periods of pregnancy—the puerperium and lactation. More recently its limits have been narrowed, and the prevailing idea is to confine it arbitrarily to the few weeks preceding and succeeding parturition—the period comprised in the onset of labor, beginning with the descent of the uterus and the first half of uterine involution.

It is a subject which concerns the obstetrician as well as the alienist; indeed, the one should possess an equal interest with the other, because it is the obstetrician who notes the prodromes, who observes the first ominous symtoms of unstable mentality, for it is seldom that it appears suddenly, but it sends out warnings, electric flashes, which indicate that the mental apparatus is somewhere at fault—the central dynamo sends an irregular current, or the conducting wires are imperfect—somewhere or some how at the starting-point, or along the line, there is trouble.

It is the obstetrician, then, who should observe the evidence of nerve exhaustion exhibited by restlessness, disturbed sleep, often the flushed face and eye of unusual brightness. Depression in some degree is so common at this period as to pass unnoticed at the time as a special feature of the disease. Perhaps the patient is garrulous, laughs or cries without reason, finds fault needlessly, disobeys directions, begins to be suspicious of her nurse or others. These are but examples of the early symptoms, which are as various as the minds which conceive them, so that we have a person who has been under physical and mental strain of a peculiar kind for a period of nine months—a person in whom the usual processes of waste and repair have been relegated to new uses. New tissues have been constructed, new secretions provided. The long months have been of great activity in the economy, and much of energy has been consumed. Extra labor has been demanded of every organ and tissue. The brain, lungs, heart, stomach, liver, kidneys, spleen—supplied with blood altered in quality and quantity—they have had to accommodate themselves to new conditions, while the nervous, vascular and respiratory systems have been each urged to their full capacity. To all this is superadded the shock of severe pain, and finally the loss of blood, which may be excessive.

If this is insufficient—and the picture is not overdrawn—we have in many cases domestic trials, moral causes, which appear with unusual intensity at this time, with a force sufficient to shatter the nervous system already strained to its utmost tension, or having the taint of inherited mental instability.

So that we find that the insanity may be developed at the time of labor, or just previous to it, the period of the culmination of all the physical changes which have progressed steadily to this end; or it appears soon after the delivery, when anæmia is present and the question of toxicity as a factor in the insanity may also be considered; or the mania is not developed until after a period of eight to ten days, when the system has begun to recover from the shock, lactation is established, and in a normal case the thoracic and abdominal viscera have resumed their usual functional activity, and it would seem to be now psychical rather than somatic, or that the balance which has been hardly held up to this time, is now lost from slight cause. Yet, passing this, we have still a danger, and insanity during the period of lactation is not uncommon. I recall one case admitted to the hospital three times at this epoch. Each time she passed the puerperium without mental derangement, the insanity not appearing till some weeks later. Each time she was maniacal, exhibiting marked exaltation of a religious character. She was the "King of Heaven," the "Pope of Rome." She talked of having "lived a million years." Each time there was recovery after treatment of eight to ten weeks.

But whether it is from anæmia, toxæmia, inherited instability, physical or moral causes, one only or all combined, as we find in some cases, the result is the same. When the nervous tension is overwrought, as it may be in parturition, exhaustion ensues, and there results sooner or later, in the wavering nervous centres, incoherence, immoderation, the brain reels, the mental structure topples.

The causes of insanity in general, as usually enumerated, are these: Shock, injury, excessive fatigue, and exhaustion of brain and entire nervous system.

Any one of these is considered sufficient to produce insanity in an otherwise healthy individual, but in a puerperal state they are all brought to bear at the same time on one organism, and when there is added the fruitful soil of inherited tendency, the wonder is not that there are so many insanities developed at this period, but that there are so few.

Also it is well to remember that the pelvic organs bear an intimate relation to the dominant force—the brain; that there is a finely adjusted balance of action and reaction between the organs of reproduction and the higher centres, and the equipoise being delicate, a disturbance in the one results in some cases in hysteria, in others true insanity, mania or melancholia, according to the conditions attending.

Pain is always a shock to the nervous centres. If they are in health they will react as do other tissues when temporarily injured; but if there is insufficient vitality or instability inherited or acquired, then the disturbance which is set up is of longer duration. In an uncomplicated case there are no definite brain lesions, but signs of exhaustion only, and the nutrition of the nerve centres would seem to be at fault. Of course, unless this is speedily remedied the functional incapacity is not recovered from, and we have permanent impairment.

Incoherence is an early symptom, and it is often excessive and persists in some degree to a late stage. Whether there be exaltation or depression, the incoherence is present, and I think it is indicative in these cases, of the acute and transitory character of the affection, as if the passage of sensory impressions to the usual centre was suddenly prevented, some obstruction having occurred, or the track to the propositionizing centre is blocked, or passing this point the speech centre or the motor centre receives the stimulus imperfectly, it having been diffused *en route*, and the result is incoherence of speech or irregular acts.

In the majority of cases there is increased mental activity, which may be either painful or pleasureable; but, as we have seen, the emotions are usually depressive and accompanied by excessive action.

I notice that it is now being considered in some quarters whether the puerperium is not a prime factor in the production of multiple neuritis and degeneration of nerve tissue, cases having been observed where these conditions followed parturition.[3]

If this is found to be true, we may with some degree of confidence assert that falling short of an actual degeneration of nerve tissue, we may have such a molecular disturbance in the sensitive cells of the nervous ganglion as to produce incoherence, faulty conceptions, exaltation or depression of mind, which may be of longer or shorter duration according to the conditions.

It is manifest that if the obstetrician was on the alert for possible mental alienation in every case, the admissions to the State and City Hospitals for the Insane would be greatly diminished and the labors of the alienist lightened. Only a word need be added as to prevention. Great stress should be laid in directions to the nurse, or any departure from the usual mode of thought or action of the woman, especially symptoms of depression noted, and the hygiene of the puerperium should be so perfect, the mental danger so thoroughly understood, that at the least suggestion of an unbalanced mind the regulations of a well-ordered insane hospital should be carried out.

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[3] *Vide* British Med. Jour., Nov., 1891.

Removal of all sources of irritation, the secreting and excreting functions carefully regulated, with rest, sleep, food, proper sedatives and tonics, and suitable attendance to prevent accidents. To these the hospital adds the non-interference of officious friends.

VESCICATION OF THE FOURTH AND FIFTH DORSAL VERTEBRÆ IN THE TREATMENT OF NEUROSES.

Alexander Harkin has repeatedly remarked that in men, as well as in women, who are suffering from various neuroses, the spine, in the region of the fourth and fifth dorsal vertebræ, is sensitive to percussion and pressure; and, basing his therapeutic experiment upon this, he has employed counter-irritation of this sensitive spot, in the treatment of various neuroses, and with success. In several cases of hysteria, trigeminal neuralgia, chorea, paralysis of the facial nerve, reflex vomiting, torticollis, dental neuralgia, occipital pain and puritus pudendi during pregnancy, the writer has employed this treatment with very good results. It consists in the application of a cantharidal blister and ether to the sensitive spot, the region of the fourth and fifth dorsal vertebræ (Wiener medizinische Presse, No. 6, 1892). F. H. P.

SOME CLINICAL FEATURES OF BELL'S PALSY AS ILLUSTRATED BY THREE CASES.[1]

By WILLIAM EVANS, M.D.,

Assistant Physician to the Nervous Dispensary of the University Hospital.

PARALYSIS of the portio dura of the seventh nerve is one of the most frequent of the peripheral palsies; and while it is often considered by physicians as a trivial complaint, it is especially alarming and intensely annoying to the patient. Its usually sudden onset, the marked distortion of those features in which human nature takes a particular pride, the partial disability in mastication and deglutition, the inability to close the eye, and the consequent imperfect lubrication of the conjunctiva, and the irritation caused thereby, all servé to impress the patient that something serious has happened. While it is generally possible to give a favorable prognosis in this trouble, unless there may be reasons for suspecting serious lesions of the nerve, as sometimes happens in chronic otitis, or mastoid disease, yet there is a number of cases which refuse to respond to treatment. After a few days the affected muscles begin to waste and to show the usual reactions of degeneration. This condition may continue unchanged for weeks and even months, until there will be noticed on the paralyzed side, instead of the smooth, expressionless features, the corner of the mouth slightly drawn, the palpebral fissure, which heretofore was large and round, so that it has received the technical name of lagophthamia, or hare-eye, will diminish in size, and the patient will be unable to open widely the eye. When this state of affairs becomes established the muscles may again respond to the faradic current, but the contraction will be short, quick, and easily exhausted. In other words, we have the phenomena of secondary contracture, which are often seen in other forms of paralysis. The following represents a type of this class of cases:

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[1] Read before the Philadelphia Neurological Society, March 28, 1892.

S. H., female, aged thirty-nine, married, applied at the Dispensary for Nervous Diseases of the University Hospital, May 8, 1891, with facial paralysis of the right side. The attack occurred nine months before, and was ushered in with severe pain in the side of the face and behind the ear.

When she came to the dispensary the muscles of the paralyzed side were somewhat wasted, but did not show reactions of degeneration. The faradic response was slightly diminished.

After she had been under treatment about two months, it was first noticed that the mouth was drawn to the right instead of the left as at first, and that the palpebral fissure was contracted.

The reactions of the muscles were normal, but the faradic response was distinctly exaggerated. Her condition remained stationary while under treatment.

Secondary contracture has always been considered of bad omen, and the patient is informed that there is little expectation of the face ever regaining its normal functions.

In a series of ten cases recently treated at the Nervous Dispensary of the University Hospital, secondary contractures were noticed in three, and by the records of two of these cases I intend to show that this complication does not necessarily indicate a bad prognosis.

E. S., female, age eighteen, single, clerk by occupation, reported February 20, 1891, at the Dispensary, stating that two days before, on arising in the morning, she found the left side of her face paralyzed. The day before she had worked for some time before an open window. The left side of her face was perfectly smooth, the eye was wide open, she being unable to close it; the mouth was drawn to the right, and she had trouble in masticating her food. There were no evidences of middle ear disease.

Electrical examination of the muscles showed no qualitative changes. She visited the dispensary regularly for treatment by the galvanic current for two months, during which time the improvement was so decided that all inconvenience had passed away. She could close the left eye almost as well as the right, and it required very careful inspection to ascertain which side had been paralyzed. At this time the muscles responded well to a weak galvanic current, but, unfortunately, were not tested by faradism.

She did not report again at the dispensary until October 5th, when she returned, complaining of difficulty in opening the left eye. The palpebral fissure was now much contracted, and the left angle of the mouth was slightly drawn upward. These symptoms were much more marked on smiling or laughing. The muscles showed the normal reactions, but there was some quantitative increase to faradism. Her chief complaint was the distorted appearance of her face, rather than any physical disability. A few days ago I again saw this patient. The orbicularis palpebrarum was still decidedly contracted, and the mouth was very slightly drawn to the left. The muscles of the two sides of her face responded about equally to a weak faradic current.

She had good use of the left side of the face, but could not distend the left cheek quite as perfectly as the right.

In this case we have all the objective symptoms of secondary contracture coming on after apparent recovery, but giving the patient no inconvenience except in a cosmetic point of view.

The next case shows even more strongly that secondary contracture is not always of serious import, and that the muscles under these circumstances may even regain their power sufficiently to carry on extra work, such as is required in trades like glass-blowing.

L. F., male, aged, forty-six, glass-blower, applied at the dispensary, April 11, 1890, with left-sided facial paralysis of five weeks' duration. The attack came on suddenly while at work. He complained of difficulty in mastication, the food tending to lodge between the cheek and lower jaw; total inability to distend his cheek as required in working at his trade, and pain in the left eye from conjunctival irritation. The muscles of the left side of the face failed to respond to faradism. Ear examination threw no light on the cause of the trouble. The patient was treated by the constant galvanic current; and a note made, April 28th, reports "improvement." October 7th: Improvement was decided; could close left eye almost as well as the right, but still could not distend his cheek sufficiently to blow a bottle. He did not report at the dispensary for two weeks after the last note was made, when it was first noticed that the mouth was drawn slightly to the left side, and there was marked contracture of the orbicularis palpebrarum. The muscles at this time showed no qualitative changes, and responded well to faradism. The patient insisted that he was improving, which he frequently tested by attempts at bottle-blowing. He came regularly for treatment until November 10th, and then did not report again for five weeks, when he called to inform us, with evident gratification, that he was able again to blow a bottle. The muscles of the left side of his face still showed marked contractures.

The conclusions from a study of these cases are:

1. That secondary contracture is not an infrequent sequel to Bell's palsy.

2. That it may come on even after apparent recovery, and

3. That it may exist and the patient still possess good use, and, in some cases, extraordinary use of the affected muscles.

SULPHONAL IN EPILEPSY.

G. A. Bannatyne, M.D., in the "Bristol Medico-Chirurgical Journal," December, 1891, says that when the cause of epilepsy has disappeared, the fits may continue, because the brain has become hyper-excitable and the convulsions may have determined secondary lesions, often incurable. By suppressing the fits, sulphonal can, if given in time, prevent the lesions; and where the cause is unknown or inaccessible to treatment, it can still lessen the number and severity of the attacks. It should be given at bedtime in two separate doses of from ten to forty grains, and not pushed sufficiently far to produce languor during the day. A report of eight cases is given, where the ordinary treatment had little or no effect, in which sulphonal caused a cessation of fits so long as it was taken, or a great lessening in their number and severity.

A. F.

Neurological Digest.

CURRENT ANATOMY, PHYSIOLOGY, AND PATHOLOGICAL ANATOMY OF THE NERVOUS SYSTEM.

BY JOSEPH COLLINS, M.D.

BULBAR PARALYSIS.

The remarkable activity displayed in the search after pathological knowledge has recently received apt elucidation by the almost simultaneous publication, from two different observers, of cases of apparently, judging from the symptoms, bulbar paralysis, but on post-mortem and microscopical examination found to be bearing of no close relationship to this part. The case of Hoppe, observed in Berlin and published in this country (Med. Rec., April 30, 1892), gives the details of three other cases besides his own, observed respectively by Wilks, Oppenheim, and Eisenlohr, and to these can now be added the case published by Senator (Neurolog. Central., March 15, 1892).

The remarkably loose way in which the name bulbar paralysis has been handled is a matter to be regretted; and now that we are seemingly on the brink of having a disease with apparently the same complex of symptoms as paralysis depending on bulbar lesion, it behooves us to have a clear and thorough comprehension of the leison productive of this disease in mind, when we make use of the term. Frequently we see writers using the term labio-glosso-laryngeal paralysis as synonomous with bulbar paralysis, and this is to be disparaged, seeing that the symptoms of bulbar paralysis may result from many different anatomical lesions, as the symptoms of disease of the spinal cord do, and the time may not be far distant when we shall be able to clinically differentiate between at least some of these affections.

Bastian states that bulbar paralysis may be dependent on (1) Traumatic causes. (2) Rupture of blood-vessels within the substance of the bulb. (3) Occlusion of blood-vessel supplying the bulb (leading to foci of softening). (4) Chronic meningitis. (5) Tumors originating in the bulbs or its meninges. (6) Disseminated sclerosis. (7) Degenerative changes in the motor ganglion cells (labio-glosso-laryngeal paralysis). To these apparently we must add another to include these cases of which we have spoken above, for although they are few in number it will be shortly remarked that other and like examples will be seen now that attention has been called to it. And whether to call it a general neurosis, as Oppenheim has done, or to believe that satisfactory proof of the lesion will yet be found somewhere in the motorial areas, will of course depend upon individual ideas.

Senator's case in brief is that of a laboring man, forty-one years old, who was received into the hospital on account of paralysis and dumbness. Twenty years before he had a sore on the penis with attending inguinal gland infiltration. About two months previous to his admittance he took cold and suffered somewhat from a cough, which afterward became more severe, but which did not however cause him to give up his work. About this time his wife began to notice that his speech had a marked nasal twang. A few days previous to his admittance he had some trouble in the night in swallowing and speaking; the tongue was very immovable and the jaws could not be widely separated; the facial expression was somewhat staring and the eyes very prominent; later on he became very restless, and the next day had loss of motion in right arm, which prevented him from writing his wishes as he had previously done. When he walks he is inclined to walk toward the left and drags his right leg after him somewhat.

He understands what is said to him, but cannot utter a tone or sound. He has some elevation of temperature and acceleration of pulse and respiration. The mobility of the right arm is very slight, in extension and supination of the forearm he cannot extend the fingers, the mobility in the right leg being considerably better. Plantar and patellar reflexes quick, right foot clonus more than left, and both cremaster reflexes alike. Bladder and rectum normal, no fibrillary twitchings in the affected muscles. Paralysis of the trunks and branches of both facial nerves, inability to raise or close the eyelids, or to wrinkle forehead, mouth constantly open, very little mobility of the tongue which, however, presents no atrophy or fibrillary twitchings. Sensation for pain, taste, temperature, position and location seemed to be unimpaired. Irritation of the conjunctival mucous membrane causes contraction of the eyelids. Sight, taste, hearing all normal. Feeding is painful, and fluids have to be poured into the mouth, or the stomach-tube used. A left pleural effusion from which he suffered had to be aspirated. Electrical examination of. the muscles of the face showed that the left side of the face required a stronger current to cause contraction than did the right, and the contractions were lightning-like quick. The mechanical irritability of the facial muscles is very much lessened. At this time the restlessness of the patient increased and his memory was very deficient. From this time on for some days the patient seemed to have some returning muscular ability in the face and throat muscles, so that he was able to open the mouth better and bring out a very indefinite tone; his restlessness, however, continued unabated, so that it was necessary to resort to anodynes. Later on it was observed that it was possible for him to say one word, "ja," which, however, requires no articulation; and a remarkable change now also observed was that even a slight mechanical irritability of the chin and lips was manifested by an increased contraction of the muscles of these parts, the electrical conditions remaining as before. A relapse followed shortly, and the patient died with these paralytic symptoms greatly aggravated, from the complicating pulmonary trouble. This was after six months of illness, and four months after the symptoms of paralysis first showed themselves. The autopsy revealed left pleural adhesions, an encapsulated empyema of about the size of the fist, in the left upper lobe a cavity about two cm. in diameter, and extensive per-bronchial tubercles. Heart normal, mucous membrane of larynx pale and œdematous, and the vocal cords covered with a slimy exudation. Skull cap, normal; dura, hyperæmic; pia non-adherent, brain surface moist and shining, and on cut sections could be seen numerous small and large spots of recent hemorrhage; the remainder of the great and lesser brain was apparently normal, with the possible exception that the blood-vessels on cross-section in the internal capsule and the lenticular nucleus and external capsule seemed to be rather farther apart than normal. In the ventricles a considerable clear fluid was found. The pons, medulla, and trunks of the facial and pneumogastric and hypoglossal nerves were scrupously examined and absolutely nothing abnormal found. The muscles of the tongue showed very little change, as did those of the larynx, perhaps here and there a small collection of pigment or a few fibres undergoing fatty degeneration.

The case reported by Hoppe is very similar to the above, with the exception that the latter developed symptoms much more slowly, and after a period of about six months had a period of seeming alleviation of symptoms which lasted for a few months. This did not occur in the case reported by Senator, or at least if there was any amelioration of the symptoms at the time when the patient became able to make a tone for a few days, it was extremely transitory. Then again in the case reported by the latter there was more or less partial hemiplegia, in so much as the right arm and to a less extent the leg was disabled, while in Hoppe's case there was merely some weakness of the extremities. The microscopical examination of the central nervous system and the peripheral nerves gave just as little information as regards the lesion of the disease in the latter case as it did in the former, in fact by most careful examination the results were entirely negative.

Hoppe, in order to show the similarity in the course and development of the disease between his own case and those reported by the observers mentioned above, gives a short review of those cases and a table of comparison; this shows that the disease first manifested itself by some disturbance of speech, weakness of the muscles of mastication, more or less ptosis or strabismus, and generally weakness of the extremities; it shows also that in each case the course was chronic, lasting in each case considerably more than a year, and interrupted in its development by remissions. There was involvement of the functions of the oculo-motorius, motric fifth, superior facial, inferior facial, glosso-pharyngeal and pneumogastric nerves in each case to a very great extent. The hypoglosal in each case remained free. The electrical reactions showed no evidence of degenerative atrophy, and death in every case ensued from paralysis of the circulation and respiration. This was the case in Senator's patient also, for although that case presented some symptoms which cannot be reconciled with the symptoms found in the histories collected by Hoppe, it is to be remembered that many of these symptoms were the direct concomitants of the extensive sero-purulent pleurisy from which the patient suffered during the course of the paralysis. Hoppe says that this complex of symptoms can be differentiated from the atrophic form of bulbar paralysis (type Duchenne), from acute bulbar paralysis and from that condition known as pseudobulbar paralysis. This is quite possibly true regarding the first two mentioned, but as regards the last, viz., pseudo-bulbar paralysis, it is not so apparent. As he says, it may be differentiated by the mode of its development, its course and duration, and especially by the absence of any pathological changes after death. In most of these cases reported, the remissions, the chronicity, the unimpairment of nutrition in the tongue, the absence of any change in the electrical irritability, and the persistence of reflex action were all prominent, and this is most always the case in pseudo-bulbar paralysis. In pseudo-bulbar paralysis ordinarily there are two attacks, generally first attacking one side and then the other, and the second attack is generally followed by the paralysis of the lips, tongue, and pharynx; and although it is not clearly evident that there were two attacks in the cases reported by all these observers, in some of them, as in Eisenlohr's case, this was apparently so, where weakness of the lower extremities and ptosis took precedence of any symptoms pointing to bulbar implication; this was likewise so in the case reported by Oppenheim. The differentiation from pseudo-bulbar paralysis is not therefore so evident, nor is it easily made. The one factor that is undisputably present in these (4) cases commented on by Hoppe and in the case of Senator's is the absolute want of pathological change in central or peripheral nervous system on which the symptoms could be dependent; for in Hoppe's case, at least, the examination was thoroughly and exhaustively made and comprehended the entire central nervous system and the peripheral nerves.

Of course, the interesting point in the consideration of these cases hinges around the question, Are we to add a new disease, with a sufficiently well-marked symptomic entity to entitle it to a separate nomenclature to our present category? Oppenheim, following out a course of iniatitive, seemingly suggested by Charcot in discussing the history, a somewhat analagous condition would have us believe that the symptoms of his case and of the others spoken of are dependent on a neurosis, or rather that this conclusion is forced upon us as no other causation is apparent.

Hoppe tentatively suggests that perhaps the paralysis may be the result of ptomaine or toxic-albumen poisoning, and thinks that possibly the peri-bronchial tubercular nodules found in the case reported by him may stand in the light of a causative influence in developing these poisonous factors. Although such evidence of tubercular causation was not found in but three cases referred to by him, they were found in Senator's case. Of course this would be putting these cases under the heading of multiple neuritis; for although Hoppe says, in his opinion, the cortical centres of the brain may become affected from such a toxic product so as to cause a complex of symptoms whose main characteristic is a slowly progressing paresis, this is extremely improbable, for many reasons. In the first place, there is no initiative, either theoretical, clinical, or experimental, for making such a statement; and secondly, we know from both experimental and clinical observations that toxic products when in the blood, whether they are generated within the body or taken in from without, have a marked predilection for the peripheral nerves, and thus destructive influence becomes manifest here to such an extent as to cause death without causing any change whatever in the cortical substance. Of course, one can say that it may cause changes in the cortex, which we are as yet, by reason of our immature methods of treating the tissues for examination, unable to detect; but the advancement of such a hypothesis as an explanation of the pernicious effect of a toxic product is wholly unnecessary.

This does not apply to another suggestion made by Hoppe, in which he says: "I would like to call attention to the possibility that the cause of the disease may be a pathological change in the cortex of the brain which has escaped our attention." This idea deserves much more recognition than the others, for it is well known that great difficulty or loss of power of articulating, together with difficulty in swallowing, with or without some accompanying paresis of the limbs, may be occasioned by symmetrical bilateral lesions in the cortex of the cerebral hemispheres, occupying the posterior extremity of the third frontal and the inferior extremity of the ascending frontal convolutions; or also by a double implication of the efferent fibres from these convolutions when on their way toward the genu of the internal capsule. Such a lesion would not account for all the symptoms found in these cases, and particularly would it be found lacking in causing the mode of death by which these cases all terminated, viz., paralysis of respiration and circulation; for in such a lesion respiration and the action of the heart are but very little interfered with. A lesion, therefore, to cause all the symptoms recorded, would have to be rather extensive in its dissemination, and in these (5) cases there was evidence of mental aberration but in one, and that rather slight, it would appear that such a lesion would be removed entirely from that part of the cortical substrata which is the origin or home of intelligence.

Whether the case reported by Senator may be considered entirely in the same category as Hoppe's case and the others mentioned by him is questionable, as there was apparently some evidence of hemiplegia before or during the appearance of the bulbar symptoms, which may in part account for the latter.

The publication of such cases will at least stimulate us to be on the careful lookout for anatomical evidence of our cases of bulbar paralysis, and in this way tend to a solution of the apparent enigma. It also brings to remark on the many investigations that are being made to bring forth a thoroughly reliable stain for the cortical substance.

Our paucity of knowledge concerning the finer structure of the central nervous system, and the unsatisfactory results obtained with the ordinary staining methods, is the probable apology of the seeming rivalry existing between workers in histology, as to who can bring forth the greatest and most successful number of stains or to better those already existing. Some time since Berkley, of Baltimore (Johns Hopkins Hospital Bull., No. 13, 1891), suggested a method, seemingly based on Friedmann's method, and on Kaes' modification of Wolter's stain, and at the same time posessing some of the qualities that have served to place Ramon y Cajal's method so high in the estimation of scientists.

The method described as Berkley is briefly as follows: Pieces of tissue which must not be larger than 2.5 mm. in thickness, come for twenty-four to thirty hours in Flemming's solution, at a temperature of about 25° C., and then are at once placed in absolute alcohol without having been washed, and here they remain for twenty-four hours, the alcohol having been changed once in the meanwhile. Then if the pieces are sufficiently hardened they are laid in celluoidin for from twelve to twenty-four hours, and after that are ready for cutting, and this should be done with extreme care in order not to have the specimens too thick. After cutting, they are washed in water and then placed in a saturated solution of acetate of copper, where they remain over night ordinarily, but the process may be hastened by raising the temperature to 35–40 degrees for a half hour or so. After the coppering, the specimens are washed quickly in water, and then placed at once in the hæmotoxylin solution, which is prepared by taking 50 c.c. of distilled water, which is boiled thoroughly for a few minutes and then has added to it 2 c.c.m. of a saturated solution of lithium carbonicum, and then of a 10 per cent. alcoholic solution of hæmatoxylin, about 1.5 to 2 c.c.m. are added, then heated for a minute longer, the flask corked and allowed to cool, when it may be ready for use; but allowing it to stand for some hours is attended with better results. The time necessary for the specimens to remain in the hæmatoxylin varies from one to three minutes, then they are removed, thoroughly washed in water, dehydrated in alcohol, cleared in oil of bergamot, and mounted in xylol balsam.

The author remarks that the differentiation between the white and the gray substance is much less clearly marked than in preparations stained by Weigert's method; but with his osmium hæmotoxylin-copper method, with a little care and experience, the fibres, cells, and even the glia, will be stained, and the details of each well marked.

In the "N. Y. Medical Record" for March 12, 1892, this same author gives the results of some of his experiences with this stain on the cortex of the dog and the human being. In considering the cortex, he divides the medullated tubes of the gray layers into three principal systems—the radial, the inter-cellular, and the tangential or sub-pial fibres. The fibres of the radial layer passing out from the sub-cortical white matter in two different ways, one at an acute, the other at an obtuse angle, the first passing well into the intercellular layer without giving off any off-shoots, and the second beginning to give off off-shoots about opposite the fourth cellular layer, each off-shoot being directed toward a pyramidal cell and probably not going to one cell alone, but to two or more cells, and the impulses from several cells may not in this way be dependent for their transmission on the integrity of one fibre alone. It was not possible to trace each fibre to its cell, but a sufficient number were traced to state authoratively that such is the termination of the radial fibres. The fibres in the inter-cellular network are smaller than those of the tangential band, but there is considerable variation in their calibre. They have along their course regular swellings of the medullary sheaths, and it is from these that branching occurs. It is possible that these medullary nodes have a definite physiological meaning, as they are constant in perfectly hardened tissues that have been taken from the living animal and hardened in Flemming's fixation fluid. And it is the opinion of B. that they correspond to the nodes of Ranvier. The question of the branching of the fibres has not been in so unsettled a state as has the question of their anastomosing. Most anatomists are willing to concede the former, but this is by no means so of the latter. In a few instances B. says he has been able to determine the anastomosis with certainty, and he gives a very meagre figure in support of the anastomosis as seen.

He is able to corroborate the opinion of anatomists in general as regards the fact of the absence of non-medullated fibres, as he says, throughout the whole cortex no non-medullated fibres of any length were found to exist; so far as could be definitely determined, as soon as the protoplasmic character of the nerve-cell process is lost, the medullated character of the nerve fibre begins. It would, therefore, seem that the axis cylinder was immediately covered with an isolating envelope as soon as it had separated itself from the cellular protoplasm.

If this stain gives as good results in the hands of Dr. Berkley's co-workers as it has apparently done in his we have reason to congratulate ourselves on having taken a step in advance in regards to solving the histological structure of the cortex; the stains that we have at present have their greatest objections in their uncertainty, such as Golgi's and Ramon y Cajal on the one hand, and the method of preparation for the hæmatoxylin stains on the other; for it is forced upon us to believe that if we are to make serious strides forward in determining the lesions of the many so-called functional diseases which many believe to have their seat in structures of protoplasmic nature, it must be done by some method which does not entail its treatment by the potassium salts for weeks and even months which cannot but cause a partial obscuration of the conditions found in the recent state. Therefore a stain which seems to embody some of the virtues of the hæmatoxylin and the Cajal stain surely deserves a very extensive trial.

A NEW METHOD OF PREPARING BRAINS FOR PRESERVATION.

The preparation of brains for anatomical class-room demonstration has been rather unsatisfactory, and until the present time the method of treating them in a ten to twenty per cent. solution of nitric acid has been about the most satisfactory way, but this causes such shrinkage and alteration in the normal relation that the idea received from its study is generally not a satisfactory one, and must needs be greatly supplemented and cleared up by the study of the fresh brain. Recently Dr. L. Steida has made known a method by which the brain may be prepared in toto or in sections, showing normal relations very little altered (Neurolog. Cetralb., March 1, 1892). The method of preparation is very simple: The specimen is first immersed in a concentrated solution of chloride of zinc, sufficient of the liquid being used to allow the specimen to float. After remaining twenty-four hours in this, the specimen is removed, and although it is still soft and pliable, it is found to be possessed of sufficient toughness and consistency so as to allow the pia to be easily removed and without disturbing the relations of the convolutions or injuring the cortex. The brain, either in its entirety or after separation into parts, comes next, in a ninety-six per cent. solution of alcohol, where it remains for two or three weeks; and in order to expedite the process of hardening, it is advisable to renew the alcohol occasionally, say every five to six days. The entire brain or portions of it is now placed in turpentine, where it must remain from two to four weeks, depending on the quality of the turpentine and the extent and thoroughness of hydration caused by the alcohol; for if the brain be free from water when it is placed in turpentine the process will go on very rapidly. In summer the time required will be shorter than in winter, and it may also be hastened by the use of a small incubator; but great care is necessary to prevent shrinkage. By means of the turpentine the specimen becomes again soft but transparent, and it has acquired a brownish color, varying in tint with the kind of turpentine used. For the last part of the process it comes in oil varnish, where it remains for two weeks. Thereafter it is removed and allowed to stand for two weeks, or a shorter period, at the temperature of the room until it is dry and no longer oily to the touch. When complete, the specimen is of rather a pretty brown color, very little shrunken, and in good shape for study and demonstration.

Periscope.

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The Editor will not accept as ORIGINAL ARTICLES and CLINICAL CASES those that have appeared elsewhere.

Authors are requested to make none but typographical corrections on the proof sent to them. The manuscript must represent the final form in which the article is to be printed.

ANATOMICAL.

THE COURSE OF THE POSTERIOR ROOT FIBRES OF THE CORD.

In the "Centralblatt f. klinische Medicin" appears an abstract of the conclusions of R. Oddi and U. Rossi, "Sperimentale," deducted from extended research and physiological studies upon animals. These authors find that with the exception of a small bundle of direct ascending fibres passing upward on the same side, the remainder pass directly to the cells of the posterior horns of either side and some to the anterior horn of the opposite side.

In tracing the terminations of these fibres it was found that those diverging in the column of Burdach were joined at a higher level by others from Goll's column. A small number of fibres pass, by means of the gray commisure, to the posterior and anterior columns of the opposite side. Others again seem to join with cells of the lateral columns of the same side. The ascending fibres in the lumbar region from the posterior and lateral columns pass directly to the posterior columns of the opposite side. In the cervical region the greater number from the anterior, and a few from the lateral and posterior, columns take the same course. The trophic centre of the posterior nerve roots was probably in the spinal ganglion and of the posterior horns in the ganglion cells of this situation. B. M.

PATHOLOGICAL.

ACUTE ATAXIA.

Under the name of "acute ataxia" Leyden has described an affection which is characterized by rapid and sudden appearance of a distinct axtaxia on movement (Zeitschr. f. klin. Med., Bd. xviii.). A unanimity of opinion exists, in regard to the cases thus far described, as to some important points; for instance, the sudden appearance of ataxia, its rapid course, sometimes fatal, but more frequently ending in recovery. He describes two groups:

1. The central (cerebral) form of acute ataxia. The most important symptom is the ataxia, with disturbance of sensibility, or only transiently associated with it. It is almost always accompanied by stammering speech, which reminds one of multiple sclerosis. The intellect is frequently affected. Some cases take a favorable course, and recover in a few weeks; others become chronic and incurable. The process itself has no tendency to advance. It may be of spontaneous origin, or due to trauma, or acute infectious diseases (small-pox, typhoid fever, dysentery, erysipelas). The pathological process is probably a multiple insular (acute) encephalomyelitis which terminates in sclerosis. The location of the lesion is in the mid-brain, more especially in the region of the pons.

2. The second is the sensory form. It belongs to multiple neuritis (also described as pseudo-tabes). It is characterized by its sudden appearance, frequent termination in recovery or in considerable improvement, and by the involvement of the sensory nerves of the

lower extremities (pain, hyperæsthesia, formication, anæsthesia). On the other hand, the speech is rarely affected. The usual cause is of a rhematic character, such as exposure to cold and moisture.

The following is a typical case of the second group: The patient was fifty-five years of age. Formerly healthy, save a rheumatic affection fourteen years before. Since then in perfect health. Exposure to cold was the undoubted etiology in this case. This was followed by dysæsthesia, and in five days the sudden appearance of complete ataxia. The upper extremities and the cranial nerves were not affected. Pupillary reaction normal. In the lower extremities the motility was normal, but there existed decided ataxia on movement, static ataxia, slight impairment of sensibility, marked analgesia, dysæthesia, lancinating pains, absence of the knee-jerk, and vescical weakness. Rapid improvement took place within three months, which terminated in complete recovery.

W. M. L.

EPILEPSIA PROCURSIVA.

(N. Y. Med. Jour., Sept. 5, 1891.) John Ferguson, M. D., regards this form of epilepsy especially interesting from a medico-legal point of view, as many persons who are now genuine epileptics have suffered from irregular symptoms before their disease declared itself, and others have only had these premonitory conditions at the time when criminal acts were perpetrated. He divides this variety of epilepsy into three groups: 1. Those cases where the procursion constitutes the entire attack. 2. Cases where the procursion immediately precedes an ordinary attack of epilepsy. 3. Where the procursion follows an epileptic attack. In a case recorded by the author, the patient, a child, fell out of its high chair when two years old, and had immediately after vomiting and vertigo. A month later he would suddenly stare, flush in the face, rush forward, and then stand with a fixed look. When the attack passed by he would move about as usual. These paroxysms continued for over a year, when the ordinary epileptic seizures developed. A female patient, aged twenty-four, only had attacks when at the table. The face would become pale and then flushed, and the eyes staring. She would rush away from the table, stand still, sit down, or quietly return. No cause could be found. She was unconscious of these acts. At no time was she ever known to have a regular epileptic paroxysm. A third case was that of a man aged forty-five, who had undergone a great deal of fatigue, exposure, and excitement. The most characteristic feature was the length of individual attacks. He would pass into the status epilepticus, and in this condition run straight ahead, stand still, then rush on again, and again stand. He would sometimes do this for two hours, and then go to sleep. Ordinary epilepsy after a time followed. Another patient began to exhibit spells of absent-mindedness at the age of seven years. Three years later he was noticed to make short runs, of which he had no knowledge when questioned, and at the age of fifteen regular epilepsy came on. At this time he would perform the run after the epileptic attack. Dr. Ferguson believes that to begin early and well is the real key to success in the treatment of epilepsy, and urges that the closest attention be given to all cases of absent-mindedness and momentary loss of consciousness. A. F.

PSEUDO-BULBAR PARALYSIS.

Dr. Boulay (Gazette des Hôpitaux) has contributed a long and very carefully written article on this subject. He begins by calling attention to the fact, that although certain lesions of the medulla cause that clinical picture which we call bulbar paralysis, we must not conclude from the presence of these symptons that there is necessarily a lesion of this organ.

In other words, the symptons of bulbar paralysis may be present without any disease of the medulla whatever.

The symptoms of pseudo-bulbar paralysis are so similar to those of the true affection of the medulla, that it is very easy to confound the two maladies, and it is on this account that stress will be laid on their differences, rather than on their points of resemblance.

The subject of this affection is noticeable, first on account of the expression of his face, which is mobile and natural in its upper part, while the lower portion is inert and motionless.

The eyes are wide open and the wrinkles on the forehead are quick to form. On the other hand, the naso-labial folds are but slightly marked, the cheeks are pendent, and the saliva flows from the half-open mouth; all of which gives to the patient a surprised and anxious expression of face. He understands the questions put to him, but his replies are not easy to understand, since they are almost unintelligible. He is not obliged to seek for his words, for he finds them without effort; but on the other hand, his speech is embarrassed and monotonous. The character of the voice is changed, becoming weaker and more nasal in its tone.

In short, the patient is not aphasic, being able to talk, read, and write without intellectual effort. He is affected with that special difficulty of articulation which has been described under the names of dysarthria and anarthria, which depend upon a paralysis of the lips, tongue, and soft palate. The movements of the tongue are never completely abolished. It is almost impossible for the patient to move it from side to side, and if it can be projected from the mouth, it almost always deviates to one side or the other. Indeed the degree of paralysis is seldom equal on both sides, this being specially evident in the palate. In aggravated cases the uvula hangs motionless, and the tongue cannot be projected from the mouth.

In these cases of pseudo-paralysis, deglutition and mastication may also be affected, just as in true bulbar paralysis. Solids are swallowed better than liquids, which are apt to regurgitate through the nose. The saliva flows almost continually from the mouth, especially when the patient is standing upright. In advanced cases, the mouth cannot be opened, and deglutition becomes impossible.

When all these different parts are affected we have the complete picture of the disease; but it should be said that cases are often seen where one or more organs remain untouched.

A characteristic common to all these paralyses, whatever may be their distribution or their extent, is the absence of atrophy in the affected muscles. The tongue retains its volume and its ordinary consistency. Its surface remains smooth. The lips retain their usual thickness. Ordinarially there are no fibrillary movements. The condition of the reflexes is variable. They are generally diminished, with the exception of the masseteric, reflex which may be increased. If the lower jaw be suddenly pulled down, there occurs a sort of epileptoid trembling in it.

The electric reaction presents a marked point of difference between the true and the false bulbar paralysis, for in the latter form—that is, the disease in question—the electric reaction is normal, there being neither reaction of degeneration, nor even diminution of excitability to the faradic current. The tactile sensibility of the parts is unaffected, even in those cases where reflex action is more or less completely destroyed.

In addition to these various symptoms, there is generally present a certain amount of paralysis of other parts of the body. The walk sometimes resembles that of an ordinary hemiplegic patient, sometimes that of paralysis agitans. The movements of the arms are also affected, being reduced in extent and the muscular strength being lessened.

The mental symptoms observed in patients suffering from pseudo-bulbar paralysis are not characteristic, but resemble somewhat those of hemiplegia. Loss of memory, mental torpor, incoherence of ideas, and even dementia, have been observed. He is irritable, and is apt to laugh or cry without apparent cause. A very curious fact has been noted apropos of these fits of laughter—it is that the patient is unable to laugh voluntarily, but only does so when the fit takes him.

Pseudo-bulbar paralysis generally appears suddenly, on the occasion of an apoplectic stroke, and in those who have already had similar attacks, accompanied by transitory aphasia. In other cases there have been no previous attacks, and the pseudo-bulbar paralysis appears along with the first hemiplegia. In still rarer cases it appears without either paralysis or loss of consciousness, a simple attack of vertigo being the only forerunner.

The disease once established, may remain stationary, improve, or become worse; its course is generally very irregular. It may become worse spontaneously, but generally the aggravation is the result of a fresh hemorrhage. The cardiac and respiratory troubles, which so often produce a fatal termination in true bulbar paralysis, are almost always absent in the disease in question.

The duration of pseudo-bulbar paralysis is extremely variable, but a large number of the cases die in a few months, while some are carried off in a few days. Patients sometimes survive a long time, however; and there is one case on record where death occurred eleven years after the commencement of the malady, the cause being a broken leg.

The ordinary cause of death is a fresh apoplectic attack.

A cure seems possible only when the cerebral lesions owe their origin to syphilis. W. F. R.

CLINICAL.

APHASIA.

Dr. Knoblauch reports an interesting case of disorder of the articulating capacity from cerebral disease. The patient, a child six years old, presented motor aphasia and right-sided hemiplegia following acute encephalitis, consequent upon scarlatinal nephritis. From the beginning of the aphasia, which was permanent, the patient was incapable of spontaneous speech, although he appreciated perfectly everything that was said to him. The curious part of the case was, that articulation was possible when the little patient attempted to sing familiar airs (Centralblatt f. klinische Medicin).

The report of this case recalls to the writer similar phenomena presented by a patient who came under her notice some years ago. With the exception of the attack to be related, the young woman was in perfect health, was highly intelligent and anxious to be cured of her affliction. About once a year, for a number of years, the patient was suddenly seized with an attack resembling very much that of catalepsy, from which she would emerge with complete aphasia. During the aphasic period, which sometimes extended over several months, the patient was able to attend her duties as a public singer, articulation being perfect in singing voice. The restoration of the voice would be observed after an attack of less severity than the one in which the voice was lost. In the interval between the seizures the voice was natural and the patient in good condition. B. M.

HYPERTHERMIA AND HYPOTHERMIA IN HYSTERIA.

Dr. Raffaele reports an interesting case, in "Gazzetta delle Cliniche," of a female, age thirty, who, after an attack of severe odontalgia, was taken with a low form of fever. The first week the temperature ranged from 37° C. to 38.5° C. In the second week it gradually rose to 41° C. Thinking that typhoid fever may be present, a thorough examination was made, but with negative results. The third week the temperature rose to 43.5° C. During attacks of lethargy the temperature fell to 34.5° C. Toward the end of the fourth week there was present complete anuria and irritability of the stomach. The circulation and respiration remained normal throughout the attack. She passed small quantities of urine, of low specific gravity. The salts were diminished, especially the urea, also the phosphates. The earthy phosphates and alkaline phosphates were present in about equal quantities.

Her recovery, the result of an auto-suggestion, took place suddenly one morning, when she desired to attend service in the chapel. From this day her recovery was complete.

From the study of this case the author concludes: 1. That hyperthermia, or, as it is sometimes designated, hysterical fever, is now definitely understood, and represents the thermic equivalent of the status hystericus. 2. Marked hyperthermia, as well as hypothermia, when of hysterical origin, are perfectly compatible with life. 3. Hyperthermia does not cause any change in the tissues of the body, as wasting or diminution of weight, and in this respect resembles other manifestations of hysteria. 4. The examination of the urine in cases of fever of unknown nature is of great importance, since in the scarcity of its solid principles one has a good criterion to make a diagnosis. W. C. K.

SURGICAL.

ON THE SURGICAL TREATMENT OF BASEDOW'S DISEASE.

In the "Deutsche med. Wochenschrift, 1891, No. 2, two cases are described by Lemke. One was completely cured, and the other was so markedly improved, that he was enabled to return to work. Six and seven months respectively have intervened between the operations and the time of publication. The first was a young man, seventeen years of age, with cardiac palpitation, exophthalmus and a large goitre. Sudden attacks of suffocation led to tracheotomy. An unsuccessful attempt was made to open the inferior portion of the trachea. As the patient was in the meantime becoming asphyxiated, the thyroid was split, cricotomy performed, and a canula inserted. After eight days the left half of the gland was extirpated. The exophthalmus disappeared. Seven months later he was in good health, the right half of the thyroid was diminished in size, the pulse was regular, and normal in frequency, and the prominence of the eyes had subsided. He was able to attend to his duties as a painter without interruption.

The second case was a shoemaker, forty-seven years of age, the right half of the gland was removed. Two days after the operation the exophthalmus had decidedly diminished. Six months later the eyes were normal, and the heart's action was less disturbed. In the last four weeks he was able to resume work, and without difficulty he could ascend four flights of stairs several times daily. (Centralbl. f. klin. Med., No. 6, 1892.) W. M. L.

THERAPEUTICAL.

DUBOISINUM SULFURICUM.

Dr. Lewald, in "Der Irrenfreund," says that as a sedative in mental diseases this drug has no superior. He has used it in a large number of cases, and finds that its hypnotic influence can be depended upon. It is to be administered subcutaneously, in doses of not more than 0.002 gr., and it is in no case to be increased.

The author thought that if the drug were more widely known, the time would not be long before it would supersede hyoscine, as it was more effective and possessed less disagreeable properties. B. M.

THE TREATMENT OF PHYSICAL PAIN.

Prof. Hayem, in an article on this subject (Internationale klinische Rundschau), gives the results of some very interesting studies in this direction. He contends that to intelligently treat pain the varieties must be thoroughly understood, and, to facilitate matters, classifies pain as follows: Class (1) treated according to the intensity; Class (2) according to location; Class (3) the course of the pain, as to periodicity, duration, etc.; Class (4) the age of the case.

The intensity of the pain is of great importance when it comes to treatment; for pain can be of such severity and frequency as to cause death; for instance, pain of kidney and liver colic and of angina pectoris. From the frequency with which certain cases have paroxysms of pain, it is evident that such remedies as chloroform and morphine cannot be constantly employed; and it is in this class of cases that the ingenuity of the physician is most severely taxed. One of the most painful affections is facial neuralgia; the remedies mostly employed are aconitia, morphine, and atropine hypodermically; antipyrine is sometimes used in the same manner. For internal medication quinia, antifebrine and exalgine seem to offer the best results—the quinia to be given during the interval between the paroxysms. Aconitia is the drug mostly relied upon to control the pain; when the suffering is not severe, the antifebrine and exalgine are employed with benefit. Where the neuralgia is of the trunk or extremities, some remedy must be used which acts locally, such as revulsions. One of the best remedies which the author has found is the refrigeration of the part by chlormethyl. If the condition is of the congestive form, as in recent rheumatic neuralgia, scarification is good practice. The topical application of a sedative is sometimes followed by good results. Some of the alkaloids of opium, made up in an ointment, to be rubbed over the part, often relieves pain. Veratrine, camphor, and menthol can be used in this way. In hemicrania dependent upon bad digestion, the antipyrine and phenacetine, internally administered, is often followed by relief from pain. The opium preparations alone or in combination with cocaine are particularly indicated in the smarting pain, occurring in neuroses of the digestive tract. The so-called rheumatic neuralgia is best controlled by the internal administration of quinia and salicylate of soda. B. M.

STUDIES ON HYPNOTICS.

To find a hypnotic that is to be depended upon, is both certain to produce the desired result and is always safe, is the aim of the physician in the treatment of certain forms of nervous diseases. Surzycki (Centralblatt f. klinische Medicin) reports the results of his work in this direction, and says that one of the things that is much to be deprecated is the method, as adopted in public institutions for nervous and mental diseases, of making up a sleeping draught that is to be administered to all patients alike, without reference to the class of case or the individuality of the patient. He has found for hospital work, that for a hypnotic in the insomnia of neurasthenia, hysteria, and the chronic neuroses, sulfonal answers the purpose better than any other for continued administration. Where the sleeplessness is due to hallucinations, uncomfortable sensations, etc., the hydrate of amyl is far superior to any hypnotic the author has ever used. He has observed its action in a case of tuberculous meningitis, where the sleep produced was refreshing and strengthening; he considers this drug especially valuable in irritative conditions of the brain. It can be given fearlessly without regard to either heart or lung disease. As an anodyne the remedy possesses no virtue. As for urethran, hypnone, and cannabin tannate, their action is uncertain. B. M.

TREATMENT OF CHOREA IN THE PARIS HOSPITALS.

Dr. Baudoin made an extensive inquiry into the treatment of chorea as carried on in the various hospitals of Paris, and published his results in "Semaine Medicale," 1891, No. 13.

Germain Sée has obtained the best results in ordinary cases with antipyrine and arsenic. If there existed any rheumatic taint, he combined the antipyrine with the salicylate of soda. In cardiac cases Prof. Sée recommends chloral and hydrotherapy, associated with iodide of potassium, and especially iodide of calcium. Sulphur baths are also recommended. Dr. Gilbert Ballet abstains from all medication in the majority of cases, on the ground that the tendency of chorea is toward recovery. He absolutely discards antipyrine. In severe cases, arsenic or Fowler's solution may be given, from six to ten drops daily. The tonics and iron are very beneficial in anæmic cases. In intense cases spraying the vertebral column with ether may be resorted to. As to the bromides, they are only indicated in cases complicated with psychical troubles. Good hygiene, nourishing food, absence of fatigue, exercise in the open air—these are the best agents to prescribe.

Dr. Déjérine considers special medication useless in children. He advises tonics, along with massage, salt baths, Swedish movement, and, above all, good hygiene.

Dr. Joffroy lays considerable stress on rest and sleep in the mild cases, and gives chloral hydrate, sixteen to twenty-five grains after each meal to accomplish this. During waking hours all excitement, physical and mental fatigue should be avoided. In severe cases antipyrine is ineffective, and recourse must be had to the moist sheet, used twice daily.

Dr. Albert Robin has had the best success with antipyrine, giving as high as thirty-two grains daily, divided in four equal parts with four grains of the bicarbonate of soda added. After eight to ten days he substitutes the arsenate of soda for the antipyrine.

Dr. Raymond believes that there are only two efficacious remedies—antipyrine and chloral. Acetanilide has been used successfully in a few cases.

Dr. Luys uses, perhaps, the simplest treatment. His agents are "transfert," with rotary mirrors.

Dr. Sevestre gives preference to antipyrine. He begins with sixteen to thirty-two grains daily, and increases to forty-eight to sixty-four daily. At the same time he administers arsenic, either as Fowler's solution, six to twelve drops daily, or the arsenate of soda. It is necessary to avoid all excitement, and if convenient to isolate the patient.

Dr. Ollivier advises, in the first place, massage, and is well satisfied with the results obtained. He prescribes iron, arsenic, and hydrotherapy, according to the case in question.

Dr. d'Heilly insists upon hygiene, tonics, and prolonged sleep. In mild cases he prescribes arsenic, iron, bitter tonics, and baths. In severe cases he thinks antipyrine and chloral succeed best.

Dr. Legroux has had excellent results with antipyrine, and gives from thirty to sixty grains daily. In those cases associated with hysteria he administers the bromide of potassium, thirty to sixty grains daily, and the cold shower bath.

Dr. Jules Simon's plan of treatment is as follows: For the first few days the patient should be kept in bed, should be blistered along the spine, and be given aconite or conium; after two weeks the patient may arise, and then the antipyrine treatment is begun, sixteen to eighty grains daily for several weeks. After this, regular exercise, with iron, baths, etc., should be resorted to.

W. C. K.

THE SUBCUTANEOUS USE OF SALT SOLUTION IN CASES OF INSANITY.

At a meeting of the German Psychiatric Society held at Karlsruhe, November 7, 1891, Dr. George Ilberg read a paper on this subject. He experimented with the subcutaneous injection of 0.75 of salt solution in cases of insanity, where there was persistent refusal of food and threatened exhaustion. 500 to 700 ccm. of this solution, at a temperature of 30 to 37° C., was allowed to pass slowly into the subcutaneous connective tissue, its absorption being aided by gentle massage. He believed in this method of administering fluid in the presence of symptoms of exhaustion from abstaining from food, and where satisfactory artificial feeding by means of the stomach or rectal tube is impossible. This plan was successfully applied in two cases. In others, where artificial feeding could be accomplished, the solution materially improved the depressed circulation. In those cases where food was not deliberately refused, the patients ate spontaneously soon after the injection. In order to discover why this occurred, he subjected himself to this treatment after a week's low diet. In one hour after the administration of the solution there was profouse salivation, accompanied by a pungent and burning taste. He believes that the patient accepts the food in order to relieve this unpleasant sensation. If this method is not successful, the possibility of recourse to the stomach tube still remains (Neurologisches Centralblatt, No. 23, 1891).

W. M. L.

Society Reports.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of April 5, 1892.

The President, Dr. L. C. GRAY, in the chair.

ON THE PRESENT STATE OF TREATMENT OF CHRONIC DISEASES OF THE SPINAL CORD, ESPECIALLY OF TABES AND NEURASTHENIA.

Dr. LEONARD WEBER read a paper with this title. In deliberating upon the prognosis in any case of chronic disease of the cord, the first aim should be to distinguish between functional and organic disease. The first dependent upon impalpable, the latter upon structural changes. In a series of disorders, in spinal neurasthenia, in some cases of contusion of the spine, of hysterical paresis and toxic paralysis, palpable tissue-changes were generally not demonstrable. The molecular alterations were here presumably quite variable in a given series of cases, yet they might come to complete restoration, but they not infrequequently persisted, particularly in neurasthenia gravis.

In the treatment of chronic structural disease of the cord, tabes in particular, there were three methods of procedure which constituted our main reliance, and which we put to use singly or in combination, according to the special indications of the case. As to the relation between syphilis and tabes, and its amenability to treatment, the author was of the opinion that we were justified in treating a case of tabes, with a syphilitic history, by specific remedies; and, furthermore, that the results were better where the interval had been short between the infection and the appearance of spinal symptoms, and where the case was not complicated by other disorders. The longer the space, as to time, between syphilitic infection and the outbreak of spinal disease, the longer the duration and progress of the latter, the less was to be expected from a course of specific treatment. In all cases of the kind it would be well to combine hydro-electrotherapy with the specific remedies. A combination of mercury and iodide of potassium seemed to offer the best results; daily inunctions of half a drachm of the gray ointment and fifteen grains of the iodide two or three times daily.

We knew that the authorities were not yet agreed upon the importance of the rôle which syphilis played in the etiology of tabes, and and we were not yet able to pass judgment on the therapeutic value of specific treatment of the disease; but we were also aware that some of the best men had reported favorable results, and even a few cures. Symptomatic remedies were useful and often necessary to control pain, etc. It was the author's practice to give antipyrine and antifebrine in combination. In regard to electrotherapy, no other remedy had been and was applied as much in chronic disease of the cord. From the crude way of its former use to the present rational modes of its application great progress had undoubtedly been made; but the reports as to the curative powers of electricity were not only contradictory, but it appeared to the speaker, also, that the number of observers who were losing faith in its value was increasing. Nevertheless inasmuch as it could, when properly applied, relieve certain symptoms and by its stimulating and tonic effect benefit the patient, the author was not prepared to abandon its use. The constant current directly applied took precedence over all other methods. The faradic brush was also to be recommended. The third method of treating chronic spinal disease was by the not important one of hydrotherapy.

The sulphur bath was especially useful in spinal disease of specific origin, in conjunction, of course, with antisyphilitic remedies. The author had no confidence in the heroic measures that had been recommended from time to time in the treatment of these disorders, such as revulsions and cauterization of painful points, etc., as his efforts in these directions had not been attended with success. With the consideration of the treatment of spinal neurasthenia—formerly called spinal irritation—the author closed his remarks. For the lighter forms, such as were observed in young people in consequence of sexual aberration to a moderate degree, or in the state of convalescence from various acute disorders, the removal of the cause, regulation of the mode of life, mild tonics, combined with evening doses of bromides or other sedatives, the use of the steel sound where there was much urethral or prostatic irritation, a three or four weeks' course of mild galvanism to the spine, the cold sponge bath and other suitable hydrostatic procedures, would generally be found sufficient to effect a cure. When it could be done, a sojourn in the country and the use of cold baths, of short duration, was often advisable. Not so positive were the results of treatment of neurasthenia gravis, as it might develop particularly in persons with a neurotic history after influences of an exhausting character, such as years of mental or physical overwork, sexual excesses and prolonged and frequent masturbation at the age of puberty when the entire central nervous system was often disturbed. It was true that the life of the individual was not put in great jeopardy by the vicious habit, but was often made very miserable inasmuch as his capacity both for work and reasonable enjoyment were very much diminished. Even in the neurasthenic the molecular changes in the nervous centres might be such that after the removal of the cause and by applying the proper treatment, functional readjustment might not be accomplished. Whatever progress had been made in the treatment of spinal disease it had not been due so much to the light furnished by the study of their etiology as by clinical observation and practical experience.

Dr. A. D. **ROCKWELL** said that he had been interested in the statement that neurasthenia might possibly be simply the beginning of some disease of the spinal cord. In a case seen by him with Dr. Sachs, the patient was a man without bad habits, but whose nervous system was exhausted. There were no objective symptoms, but pain in various parts of the body was complained of. Dr. Sachs had thought the patient lithæmic. There was no improvement under treatment. The patient was advised to take a trip and consult Charcot, who had pronounced him a neurasthenic without organic disease. In England a physician had diagnosed the condition as one of masked gout, and had recommended diet and exercise, under which treatment the man had become worse. The question was whether there was not a commencing structural disease. A purely neurasthenic case would have shown some improvement under proper care. Examination had shown that the pupils reacted slowly and that the reflexes were exaggerated somewhat, and a little sugar was found in the urine. It had seemed to the speaker that a great mistake was made in the treatment of such cases. In England the tendency was to overlook the neurasthenic condition, while here it was given too great prominence. Neurasthenia was now made the scapegoat as malaria used to be. He could not regard the neurasthenic state as one of the early stages of tabes, though of course there was no reason why a person should not have functional disturbance and at the same time develop organic disease. While mercurials and iodides were successfully employed in the treatment of distinctly specific diseases, among them tabes, he was convinced that these remedies could be equally effectively used in pathological conditions of the spinal cord which were not syphilitic. The subject of electro-therapeutics, lately under special consideration at Frankfort, had been anything but favorably reported upon. The consensus of the opinions there expressed was that the chief effect of treatment by electricity was of a psychic nature. Still it could be stated that the temporary effect was, in a large number of instances, an improvement in the general condition of the patients so treated.

Dr. W. J. **MORTON** said he used mercurials in cases of locomotor ataxia, but did not regard the trifling improvement manifested as due to any antisyphilitic effect from the drug, but simply to its alterative properties, if he might use the ambiguous term. If syphilitic neoplasms were present then some good result might be expected from such treatment. He had been making some observations upon patients as to the effect of electricity upon the excretion of urea and upon the temperature. The results had been surprising. Changes had always resulted. In some instances the temperature during electrical *séance* had been from the normal to 100° F., and when subnormal had been raised a degree and a half. What the law was could not as yet be stated, but if the application of electricity could produce such metabolism, this was refutation of the psychic theory. He had no sympathy with the term psychic in such relation. It was merely a catch-word employed by those who had but little knowledge of the subject.

The PRESIDENT said he had never seen the typical neurasthenic condition as a prodrome of organic spinal disease. He had, however, seen some forms of so-called sexual neurasthenia simulating quite closely symptoms of disease of the cord. In some diseased conditions of the prostate or urethra, or from mercurial poisons, there might ensue a train of symptoms indicated by a pain down the small of the back and along the sciatic, capricious and intermittent, and lasting for years, and enormous increase of the cremasteric reflexes. There was an ataxia which seemingly resulted from syphilis. There was a cerebro-spinal form of syphilis in which symptoms of locomotor ataxia were present. It was a question whether true locomotor ataxia was not a neurosis. We had seen cases in which no lesion of the cord could be found. Some of these cases remained stationary for years after a course of treatment. Or there might be some improvement and then general paresis. Again the general paresis might improve. He had found that the great pain might often be relieved by rest. The ataxia was a different thing to treat. Suspension gave marvelous results sometimes. He agreed that those who found no good in electricity as a properly applied therapeutic agent knew nothing about it. Galvanism in locomotor ataxia, especially in the neurotic forms, was of as distinct benefit as could be got by most drugs. Faradism of the motor nerve troubles had also been of great benefit. We saw cases of neurasthenia gravis where there was a limited atrophy or disease of the ganglionic portions of the cord. Patients so affected were of feeble molecular power. Posterior sclerosis could arise which might have no connection with the condition, but he thought that every one who had observed many cases would find that in after years the classic symptoms of tabes would develop.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Stated Meeting, March 28, 1892.

The President, Dr. FRANCIS X. DERCUM, in the chair.

Dr. CHARLES W. BURR presented notes of

A CASE OF FRIEDREICH'S ATAXIA.—PATIENT EXHIBITED.

S. D., female, aged twenty-eight, single, born in Pennsylvania, admitted to the Philadelphia Home for nine months in May, 1891.

Family History.—Maternal grandmother living, aged eighty-two years, in good health. Paternal grandmother died of "old age." Maternal grandfather died of English cholera, paternal living, aged seventy-two, healthy. Mother in good health. Father killed by accident. A brother and sister living and in good health. One sister died in infancy. Careful questioning fails to reveal any nervous diseases in the family.

Personal History.—Patient is youngest child. Born at term. Labor easy. Instruments not used. Breast-fed. Never had convulsions. Menstruation began at fifteen years. No acute illness preceded present trouble.

Present Illness.—Patient's mother dates present illness from a fall which occurred when she was about eight years old. No serious injury resulted from the fall and the first symptom (staggering gait) did not appear until two years later. This difficulty in walking, with which later weakness was associated, gradually increased, until six years ago, since which time the patient has been chair-ridden. It is impossible to discover the order in which the other symptoms appeared, and the statement that staggering gait was the first may be erroneous. There have never been lancinating or other pains, crises, girdle sensation, or paræsthesias. Lateral curvature was noticed sixteen years ago. She has had no intercurrent disease. Some years ago chorea and later lateral spinal curvature were diagnosed.

Present State.—There is marked ataxia in arms and legs on movement, increased by closure of the eyes. On attempting to pick up a small object the hand waves hither and thither, passes beyond it, is brought back and hovers over it before grasping it. The same motion is, of course, shown on touching the nose or ear, and in putting the heel of one foot on the toes of the other. On attempting to sit with the back unsupported marked static ataxia appears; the trunk, arms, and head sway to and fro, and soon she sinks down into the chair. The movements are wide, somewhat jerky, and irregular. There is no tremor, either at rest or on voluntary motion.

There is some palsy in the legs. Talipes equino-varus is present. No palsy in arms. Knee-jerk and elbow-jerk are absent and are not re-enforcible. Plantar reflex is capricious. Chin-jerk is absent. Muscle-jerk in arms and legs is absent. Abdominal reflexes slightly present. Winking reflex present.

Sensation is normal in the arms. She localizes well and responds normally to touch, pain, heat, and cold. The same is true of the legs, except that on the toes localization is quite imperfect. The position of legs and arms passively moved with the eyes shut is well recognized. Speech is characteristic. Syllables are elicited and there is quite a great deal of hesitation. There is very slight wasting in the legs, no more than can be accounted for by disease and far too little to need involvement of the anterior horns for its explanation. Lateral spinal curvature with the convexity to the right is quite marked.

Dr. Charles S. Turnbull kindly examined her eyes, and informs me that the pupils are normal in size and react well to accommodation and light. There are no fundus lesions. No nystagmus is present; but on looking at an object near by and far to one side, there is at times a very slow and wide, irregular oscillation of the eyeball.

The abdominal and thoracic organs are normal. Menstruation normal. Urine normal. Mental condition excellent. During the nine months the patient has been under observation her condition has remained unchanged.

Cases of this disease are still sufficiently infrequent to merit publication. The main point of interest in the case is entire absence of neurological inheritance. The diagnosis of lateral curvature is also worthy of note, because it is probable that if orthopædic surgeons were on the lookout for this disease many more cases would be discovered. Within the past year there have been shown me two other cases in which the same error in diagnosis had been made.

DISCUSSION.

Dr. JAMES HENDRIE LLOYD.—I have for some time felt that I should like to see a clearer differentiation made between Friedreich's ataxia and the tabetic form of syringo-myelia, for I have a suspicion that some cases of so-called Friedreich's disease are simply cases of congenital failure of development and gliomatosis of the spinal cord. Bruhl, who has studied most of the reported cases, in his recent monograph on syringo-myelia states that it most closely simulates locomotor ataxia of all diseases.

The point that I want to make is, that where the cavity in the cord involves especially the posterior roots or posterior columns and does not extend forward and involve the anterior horns, there is established the tabetic form of syringo-myelia. The possibility of this condition has not been sufficiently recognized by writers on Friedreich's disease. Friedreich's disease is a disease of development, so is syringo-myelia. For some reasons there is a failure, in both these diseases, in the proper development of some portions of the spinal cord. In syringo-myelia it is not necessary that there should always be atrophy of the anterior horns. There is no more reason why we should always have a classical array of symptoms in this condition than that we should have it in any form of spinal tumor. Syringo-myelia is only a condition of gliomatosis, a proliferation of gliomatous tissue around the central canal. I think that if we knew the whole truth we should find that many cases of so-called Friedreich's disease were cases of the tabetic form of syringo-myelia.

In my wards at the Philadelphia Hospital I have an almost typical case of locomotor ataxia in a young person of twenty-four years. This disease has been slowly progressing since the age of fourteen years.

The patient has Argyle-Robertson pupil, atrophy of the optic nerves, fulgurent pains, scoliosis, and a tendency to slight atrophy of certain muscular groups. He has analgesia and areas of anæsthesia, but no thermo-anæsthesia. Whatever the morbid anatomy, his case suggests to my mind the possibility of some association between these two conditions, and of confusion in the reports of cases.

Many of the collected cases by Dr. Griffith have not been verified by post-mortem. A certain class of congenital or early hereditary cases of lack of development of the spinal cord are taken, and those that have a certain set of symptoms are placed in one class under the head of Friedreich's ataxia. I do not think that it is at all certain but that if we took a broader view of these cases, some of them would be found to be included under the head of a congenital lack of development of the cord closely analagous if not identical with syringo-myelia. I have no pathological foundation for asserting this positively, except the cases reported by other observers.

In Dr. Griffith's elaborate monograph 143 cases are tabulated, among which only 12 autopsies were made. In one of these a cerebral hemorrhage was found. Meningitis was observed in 10. The lateral pyramidal tracts were sclerosed throughout their whole length in 11 cases. The anterior pyramidal tracts were sclerosed in 6 cases. In 4 cases the central canal was filled with small round cells. "Supplementary canals" were observed in some cases. In one case such a canal was situated *behind* the main tube throughout nearly the whole lumbar region. In 3 cases our of these 12 autopsies true syringo-myelia was observed, as proved by this report, in which such canals, lined by columnar epithelium or replaced by gliomatous material are said to have been found.

In view of these post-mortem findings, as collected by Dr. Griffith himself, I think I am justified in asserting that many of the reported cases of Friedreich's ataxia do not represent a system disease *sui generis*, and that many of them are probably cases of syringo-myelia.

I wish it to be understood that I have not asserted that there is no such disease as a congenital or early-developed ataxia. I have simply raised the question of the differential diagnosis between Friedreich's ataxia and syringo-myelia. The question is not altogether a clinical, but partly an anatomical one.

The President.—The absence of arthropathies in Friedreich's disease is another interesting point.

Dr. J. P. CROZER GRIFFITH.—I agree fully with what Dr. Lloyd said about Friedreich's ataxia being a trouble connected with the development of the cord. There seems to be no question about that. Many cases have been reported in which it has appeared to be almost a congenital condition; since as soon as the child has made efforts at walking, difficulty has been observed. The occurrence of the disease in different members of the same family also points toward a congenital family weakness, particularly of the tissues of the posterior portion of the cord. The idea which was advanced by one of the French writers that this was not a condition of degeneration and connective-tissue growth, but a trouble with the neuroglia seems to have a great deal of truth in it, and this also would be in favor of the idea that the disease was due to a disturbance in the process of development. The idea has been advanced that the trouble is really an inherited tendency to vascular degeneration, and that as the blood supply to the posterior portion of the cord is not so great as that of the anterior portion the posterior half naturally suffers the most. In company with Dr. Burr I have been much interested in some observations relating to the condition of the cord in pernicious anæmia and in anæmia of other forms as well. These would indicate that possibly the blood supply has something to do with the development of posterior sclerosis; for the posterior portion seems to be more liable to suffer.

In typical cases of Friedreich's ataxia, as I consider Dr. Burr's case to be, there can be no difficulty in diagnosing the condition from syringo-myelia. In true Friedreich's disease a characteristic feature is that there is very little sensory disturbance. There is little or no pain. The girdle sensation is absent. The tactile sense is little affected. The muscle sense is not particularly involved. There are no arthropathies. The disease seems to be simply a progressive ataxia, spreading gradually from the lower to the upper portion of the body, and in some way the lesion does not extend above the medulla, but in some way speech is involved, and an "ataxic nystagmus," as Friedreich named it, is often present. This causes an oscillatory movement of the eyeball, which develops when the eye is fixed upon some object, particularly if to one side. The ordinary static nystagmus is rare.

There are some cases which differ from these typical cases. There have been a number such reported which I felt justified in including in a table of 145 cases which I collected and published some time ago. However, one can easily make mistakes, as I know well to my cost. A few years ago I saw, through the invitation of Dr. DaCosta, a case in which he had made the diagnosis of Friedreich's ataxia—a diagnosis in which I concurred, although the case presented some very anomalous symptoms. The autopsy showed that there was no lesion in the cord characteristic of the disease.

Friedreich's ataxia may teach us something in regard to the paths of conduction in the cord. This subject was brought up in a paper read by Dr. Inglis before the American Neurological Society last September. It is curious that in Friedreich's ataxia, with almost entire degeneration of the posterior columns, there should be so little disturbance of sensation, while in tabes dorsalis there should be so great disturbance. I do not understand why this should be so, unless possibly it is that sensation in the cord is conducted not in the posterior columns, but more in the border zone of Lissauer. Rütimeyer advances the theory, because in the two autopsies made by him this zone was affected, while in tabes dorsalis its involvement is one of the most constant lesions.

Another interesting matter which I do not entirely understand is that in the ataxia paraplegica of Gowers the symptoms should differ from those of Friedreich's ataxia, although the pathological appearances are almost identical.

In the paper to which I have referred I detailed the lesions found in the twelve autopsies which had been made up to that time. These lesions correspond in all important particulars. I think we are justified in saying that Friedreich's ataxia is a distinct combined systemic affection of the cord, just as much as tabes dorsalis is a systemic affection. We have no more right to deny the existence of this disease because some cases differ from the regular type, than we have to say that tabes dorsalis is not a distinct disease because cases have been observed and considered to be tabes dorsalis, and yet the autopsy has shown syphilitic meningitis.

It is true that in some of the autopsies some slight evidence of syringo-myelia existed. But it is also true that in some meningitis was present. In no case, however, do these lesions appear to have the slightest bearing upon the symptoms which had existed during life.

Both can only be regarded as accidental lesions, the principal lesion on which the disease depends being a systemic degeneration of certain portions of the cord, particularly of the posterior column and lateral tract.

Dr. D. D. STEWART by Dr. M. H. BOCHROCH presented for examination by the Society a

PROBABLE CASE OF SYRINGO-MYELIA.

Dr. CHARLES K. MILLS and Dr. J. B. DEAVER presented

SPECIMENS FROM A CASE OF TUMOR, PROBABLY GLIOMATOUS, OF THE CEREBELLUM, OBLONGATA, AND PONS, WITH HYDROCEPHALUS AND HYDRORACHIS.

Dr. AMELIA GILMORE read a paper on

INSANITY OF THE PUERPERIUM. (See page 408.)

DISCUSSION.

Dr. JAMES HENDRIE LLOYD.—One point in the etiology of insanity following labor which has always been of interest to me, is what is the proportion of cases in which there is a septic element. I think that sepsis is an important element in these cases, I am not prepared with figures, although on a former occasion I did go over this subject carefully. I think it was Clark who found, in studying a series of cases, that almost fifty per cent. exhibited some evidence of involvement of the womb or its surroundings—a true septic element. I do not mean to assert that this is so in all cases, but I believe that it is so in a certain proportion. In one case of insanity at the puerperium, in which I was called in consultation, there was well exhibited the conjoined effect of heredity, over-child bearing, anæmia, and sepsis. This woman had borne nine children in rapid succession, was overburdened with household cares, was anæmic, and had suffered from melancholic depression. After a troublesome labor she went into a condition of true sepsis, with elevation of temperature, a distended belly, metritis, cellulitis, and a typhoid tongue. This was her condition when I saw her four weeks after labor. She was sent to the Pennsylvania Hospital for the Insane, where she remained two years before she completely recovered. I think that the sepsis was a strong element in this case. I think, indeed, that many cases of confusional insanity or acute delirium support the view which I have before expressed that some of these cases are infectious in their nature.

The PRESIDENT.—Dr. Gilmore has alluded to the profound nervous exhaustion present in these cases. It seems to me that just for this reason they are particularly adapted to the rest cure. I am satisfied that the time devoted to treatment can be materially reduced, and, further, that cases otherwise hopeless can be cured by this means.

Dr. AMELIA GILMORE.—In regard to septicæmia, we find much less of it now than formerly. In many of the cases coming from the outside we do not know whether or not there has been a septic element. In the cases delivered in the hospital there is no septicæmia. I have seen no case which I could refer to sepsis.

In the treatment of these cases no regular method is adopted, but each case is studied by itself. The general treatment is that of rest, baths, special attention to diet, and special tonics and sedatives, as they are indicated.

Dr. WILLIAM EVANS read a paper entitled

SOME CLINICAL FEATURES OF SECONDARY CONTRACTURE IN BELL'S PALSY, AS ILLUSTRATED BY THREE CASES. (See p. 419.)

A Memoir of Dr. ANDREW J. PARKER was read by the President. A committee was appointed to prepare a minute on the death of Dr. Parker.

Adjourned.

Book Reviews.

STUDIES OF MENTAL AND CEREBRAL LESIONS. By Dr. Jules Cotard, ex-President of the Medico-Psychological Society, Assistant Physician at the Sanitarium of Vanves. Preface by Dr. Jules Falret. 8vo. Pp. 443. Paris, 1891. Librairie J. B. Baillière et fils, 19 Rue Hautefeuille.

A posthumous colletion of Cotard's works, edited and prefaced by Falret, and followed by the various eulogies pronounced at his funeral by his many associates in the hospitals and philosophical and medical societies.

All bear evidence to Cotard's superior intelligence, great cultivation, intense love for philosophy, combined with a rare medical astuteness. As his student life was passed largely with Vulpian and Charcot, it is not astonishing that his researches should have been principally directed to the tracing of the causes of mental disturbance. His experimental and clinical study on the softening of the brain, although published as early as 1865, his inaugural dissertation on the Partial Atrophy of the Brain (1868) still maintain their places as classics, owing to their great intrinsic worth. Cotard was the first, in a long series of articles, to seek the underlying principle governing the various morbid mental conditions and their connecting links.

Before him these conditions had been considered in an isolated manner without reference to their reciprocal relations. He was also the first to clearly define the delirium of negation as a distinct type. This he considered to be founded upon psycho-sensorial disturbance. Everywhere in Cotard's writings, we find the influence of the teachings of Comte predominating, and governing largely his interpretation of his clinical cases. He believes that, as in aphasia, so can the various psychoses be differentiated, and that the conceptions of force, capacity, power, etc., prevalent among the insane can be legitimately attributed to generalized psychomotor excitation. E. N. B.

THE PROVOCATIVE AGENTS OF HYSTERIA. By Georges Guinon, formerly Hospital Interne. 8vo. Pp. 392. Paris. Bureaux du Progrès medical, 14 rue dex Carmes. A Delahaze et Lecrosnier Place de l'Ecole-de-Médecine, 1889.

Our author is peculiarly adapted to his task of tracing the exciting causes of hysteria, by the analytical and painstaking work necessitated by the preparation for the competitive, admission examination for the Paris hospital internat, to which succeeded many years of a most exceptional clinical education under such men as Charcot, Bouchard, Cornil, and others, whose scientific researches were in the direction of the determination of final causes. The present work is divided into two parts, and comprises in all eighty-five cases illustrative of the manifold causes determining the hysterical manifestation. Each history is analyzed in its appropriate place, and such conclusions deduced as the facts would best warrant. Gathering together the scattered links, Guinon, in the second part of his treatise, synthetizes his previous findings in order to show that the syndrome, which had been displayed as an effect of such varied causes as emotional excitation, nervous shock, general and infectious diseases, debilitating causes of no matter what nature, is justifiable of the title hysteria.

He, moreover, shows that hysteria may be co-existent with many nervous diseases resulting from well determined pathological lesions, and that two or more series of symptoms may be synchronous although mutually independent and distinguishable.

The only plausible explanation of the fact that the neurosis is always one and the same in its manifestations, independently of the nature of its determining cause, lies in the fact that its existence depends upon an inborn and hereditary predisposition which requires but an opportune awakening to display itself with its personal variation. The study of a patient's ascendants, therefore, is absolutely requisite in tracing the causation of his hysterical tendency, which is, in all probability, dependent upon a vitiated nutrition of his nervous system. E. N B.

COMPLETE WORKS OF J. M. CHARCOT. Hemorrhage and Softening of the Brain, Metallotherapy, and Hypnotism, Electrotheraphy. Vol. ix. 8vo. Thirty-four figures intercalated in the text, and thirteen plates. Pp. 571. Bureaux du Progrès médical, 14 rue des Carmes. Lecrosnier et Babé, Place de l'Ecole-de-Médecine, Paris, 1890.

A series of abstracts of articles written either by Charcot alone or with collaborators, and appearing originally in society memoirs or in medical journals. The would-be student of the subject-matter will surely object to the form in which these articles are presented, little or no effort being made by the editor other than to completely exhaust the list of Professor Charcot's achievements, while the reader is constantly obliged to clothe the skeleton with flesh, and otherwise animate it with his previously acquired knowledge, derived, it is true, in many cases from Charcot himself.

We have presented us, moreover, many articles upon the same subject, culled from various contemporaneous publications, in which the fundamental points differ little if at all from each other, so that in turning the pages of the present volume, we are constantly confronted by the tabulation of the same facts. This is, as will be readily admitted by the unprejudiced mind, somewhat monotonous, unless to the reader, in whom the hero-worshipping tendency may awake the desire to imitate the Mohammedan in carefully guarding all scraps of paper least, perchance, some inspired word might be lost. To the truly faithful, however, old friends are always welcome, even when they are but resurrections of transition forms whose living spirit has, thanks to metempsychosis, long since inhabited the more perfected being. E. N. B.

THE FUNCTIONS OF THE BRAIN—Doctrines of the Strassburg School; Doctrines of the Italian School. By Jules Soury, of the National Library, Lecturer at the Technical School of Superior Studies (Hautes-Etudes). 8vo. Pp. 464. Paris. Bureaux de Progrès médical, 14 rue des Carmes, Lecrosnier et Babé, Place de l'Ecole-de-Médecine, 1891.

A critical review of the doctrines of the contemporaneous physio-psychology, necessitated by the modifications which the modern doctrines of cerebral localizations have wrought in the previous interpretations of mental phenomena. The author selects as radiating centres of his study the schools of Strassburg and of Italy, insomuch as in their respective ways they are characteristic of two divergent tendencies. We find in the one a complete absence of the ethnic element, the disciples grouping themselves around Goltz as master, and in the other, with a predominating ethnic element, a total absence of typical divergence.

Goltz has been a most formidable enemy to the doctrine of cerebral localization, but in the long-continued controversies, which have necessarily arisen between himself and his opponents, he has, little by little, ceded his vantage ground, until finally his own discoveries bear evidence against his interpretations of them.

The Italians, however, by virtue of that elasticity of comprehension, only to be acquired by a long heredity of intellectual development, have become the best exponents of the doctrine that the encephalos is not a homogeneous unitary organ, but rather the federation of a certain number of diverse organs. To each of these organs appertain physiologically, distinct properties, functions, and faculties. Hence the physiological nature of these parts being known, it becomes possible to deduce from it, without the intervention of new laws, the conditions of a pathological state, which in reality is but a more or less pronounced modification of the normal one (Charcot). These functions resemble all other biological ones, in being dependent upon physico-chemical processes, and hence are governed by mechanical laws. The most elementary psychic movement should, therefore, be studied in its relation to the molecular life of the protoplasmic particles whose governmental laws will determine the former's final conditions. The cosmic forces, including the psychic, are thus transmutable, and the imaginary barriers supposed to exist between animate and inanimate nature should be overturned, and that intangible nothing, called "vital force," forever dismissed. E. N. B.

A Collection of Memoirs, Notes, and Observations upon Idiocy. By Bourneville, Visiting Physician at Bicêtre. Vol. i. 8vo. Pp. 416, with six plates. Paris, 1891. Bureaux du Progrès médical, 14 rue des Carmes. E. Lecrosnier et Babé, Place de l'Ecole-de-Médecine.

A series of documents concerning idiocy and kindred cerebral conditions ranging over a period of years (1772–1840), and written by such men as Fodéré, Esquirol, Calmeil, Voisin, Seguin, Gall, etc., and compiled by Bourneville for the purpose of demonstrating, statistically, in so far as possible, the necessity of protecting society from the depredations of the irresponsible human being, by confining him in State institutions where, at the same time, every method would be employed to develop such capacities as might exist.

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THE PARALYSES IN CHILDREN WHICH OCCUR DURING AND AFTER INFECTIOUS DISEASES.*

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VARIOUS forms of paralysis occur during or after the well-known infectious diseases of childhood. Pathologically, these may be cerebral, spinal, peripheral, or various combinations of cerebral, spinal, and peripheral disease. The cerebral cases are occasionally, but not often, due to embolism; more frequently they are the result of hemorrhage, the poison of the disease weakening the coats of the vessels. Strümpell[1] has suggested that a local encephalitis analogous to the poliomyelitis which produces the spinal form of infantile paralysis is sometimes the lesion. The spinal cases are usually myelitic, arising particularly from poliomyelitis or inflammation of the anterior horns; they may be recovered from or may be locally destructive and leave permanent paralysis. During recent years cases formerly supposed to be spinal, or even cerebral, have been found to be dependent upon local, diffused, or multiple neuritis; but only a few writers have discussed infantile and juvenile cases of this kind. Chapin[1] has written an article on peripheral neuritis and the painful paralyses of early life, in which he directs attention to cases in his own practice and refers to a few reported by others. A few cases have also been recorded, and references to the subject are to be found in some of the text-books on nervous diseases and diseases of children. Most of the reported cases of neuritic palsies in children have come on during or after infectious diseases like scarlet fever, diphtheria, measles, whooping-cough, etc.; but some have been rheumatic, or, at least, apparently due to exposure. It will be seen from the records which follow that multiple neuritis, either alone or combined with myelitis, is of somewhat frequent occurrence, and that the palsies are sometimes of a peculiar and interesting type. The cases, eighteen in number, represent sequelæ of nearly all the infectious diseases of childhood; but some, as diphtheria and measles, largely predominated as antecedents.

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* Most of the cases recorded in this paper have been studied by me at the service for Diseases of the Mind and Nervous System at the Philadelphia Polyclinic. A few of them have been taken from the record books of this service prior to my connection with the institution, and a few have been seen in private practice.

Cases are first given as occurring after measles, scarlet fever, diphtheria, whooping-cough, and mumps; but besides these, the notes include a few after such diseases as influenza, malaria, and typhoid fever. After presenting the cases, diagnosis, prognosis, and treatment will be briefly considered; but the paper is intended to present a series of cases with their apparent teachings, rather than to discuss at length the subject or its literature.

CASE I.—MULTIPLE NEURITIS OCCURRING AFTER MEASLES AND WHOOPING-COUGH.—PROBABLE RACHITIC CURVATURE.—RECOVERY.

B., at the age of twenty months, about April 1, 1890, had measles, from which she recovered without sequelæ. In June she was taken with whooping-cough, and toward the last of this month was attacked with fever and diarrhœa, which lasted several days. Her legs became weak, and in a few days she could not walk, and was in great pain. She had walked for several months prior to the whooping-cough. When first examined, early in July, she was completely paralyzed in both lower extremities, which were everywhere exquisitely painful to touch and movement; and attempts to examine her threw her into tremulous excitement. Her mother and nurse handled her with the utmost care, but in spite of this she would often scream. In various ways she was tested to determine that her fear and apparent suffering were not due to fright; cautiously manipulating or squeezing her feet or legs when she was not looking always caused cries and other evidences of pain. Her feet and legs dangled helplessly, but the upper part of her body was totally unaffected. It was impossible at first, because of her suffering and fright, to examine her with electricity.

The diagnosis was made of multiple neuritis following measles and whooping-cough, and the child was directed to be kept as quiet as possible all the time. Applications of hot water were made to her legs. At first she was given small doses of salicylate and bromide of sodium, and a little later minute doses of bichloride of mercury; she was also carefully and fully nourished. For two or three weeks her suffering was extreme, and, although slow, gradual improvement took place, the pain and tenderness did not wholly disappear until the latter part of August, last from the upper part of the thighs. In September her limbs showed general wasting. Treatment with galvanism was begun about September 15th. Here and there a muscle would not respond thoroughly to the galvanic or faradic current, but no advanced electrical changes were present. After the pain had entirely disappeared from her extremities, she was unable to use her limbs; but from this time she slowly recovered power. She was quite thin, and still had a cough. She was placed upon reduced iron, cod-liver oil, and Lugol's solution, alternating the latter for a time with Fowler's solution and the compound syrup of the hypophosphites. The use of galvanism three times a week was continued, and massage, with cod-liver oil, was used on alternate days.

In October she was strong enough to stand and make a few steps without assistance; but it was now found that she was unable to support her trunk properly, and seemed to have some pain in her back. A slight prominence was found in the middle lumbar region, which was thought to be a rachitic curvature, or threatened caries. She was now placed on her back; a slight frame-work was placed under her mattress, so that she could be taken out-of-doors without changing her from a recumbent position. Massage, electricity, and tonics were continued. The child throve under this treatment, but she was not allowed to get up for about three months, when she was fitted with a light leather jacket. This was only kept on for a few hours at a time at first, and only when she was up and about. Later, however, she wore the jacket all day, but was allowed to take it off at night. In six months the jacket was taken off, at first for a few hours at a time and afterward for a longer period, until it was left off altogether. The father of this patient when a small child had, or was threatened with, some spinal trouble, probably caries, for which he was kept flat on his back for several weeks.

Both measles and whooping-cough preceded the development of paralysis in this patient; the two infectious diseases occurring closely together, as often happens. The following are brief notes of cases in which measles alone preceded some different forms of paralysis in children:

CASE II.—LOSS OF SPEECH AND BOTH SENSORY AND MOTOR PALSIES AFTER MEASLES.

Unfortunately the notes of the first of these cases are not complete. The patient came, off and on, to the Polyclinic Dispensary for Nervous Diseases for about three months.

S. W., aged three years, eight weeks before coming under observation had measles. The eruption was only imperfectly developed. During the attack, three days after its commencement, she lost speech, and also almost completely the senses of touch, smell, taste, sight, and hearing. Diminution of the various forms of sensibility was still present when she came to the service, and the muscles of the neck were so paralyzed that she could not hold her head firmly in any position, but allowed it constantly to drop forward; she also had paralysis of the legs and arms. The first signs of improvement were observed two or three weeks after the beginning of the measles. Galvanism and massage, with strychnine and iron internally, were employed, and the patient gradually recovered her sensory powers, and also from the paralysis; but at the end of three months it was noted that the patient, while able to walk better, was still weak, and complained of pain in the soles of her feet.

CASE III.—MEASLES FOLLOWED BY BRONCHITIS AND THIS BY PARTIAL PARALYSIS.

L. T., aged five years, four or five months before he was first examined, had an attack of measles, but entirely recovered, and remained so until six or seven weeks before coming under observation, when he developed bronchitis with some cough and nasal catarrh. His sister was affected in the same way. His mother noticed after this that he had regurgitation of food, water, etc., and also that he dragged his left leg in walking. The boy's chest was filled with moist and dry râles, and he had a large tumid stomach. Although he dragged the left leg, the limb was not atrophied. He had nocturnal incontinence of urine. At one time, for a short period, he was unable to hold up his head. He was placed upon strychnine, massage, and electricity, and made some improvement, but came to the service only a few times, and then ceased attendance.

CASE IV.—DIPLEGIA AND OCULO-MOTOR PARALYSIS AFTER MEASLES.

This patient, a girl of four years, came to the service in October, 1887. She had had measles in May, and since then had not been able to walk, and could talk but little. The attack of measles was very

severe, the child being sick about two months. While still in bed she lost power in both her lower and upper limbs; she also had convergent strabismus in the right eye. Both knee-jerks were absent, and the limbs were somewhat wasted. The patient continued to come for treatment for more than two months, steadily improving under galvanism, massage and tonics.

I have among my notes the record of a case of measles which was followed by complete aphonia, which lasted several weeks, and which was not accompanied by any other paralytic symptoms.

Although the notes of these four cases, except perhaps of the first, are meagre, they are of value for the discussion of the pathology and treatment of such affections.

Allyn[1] collected forty-one cases of paralysis occurring during or following measles, including one of his own. Thirty-five of these, according to his analysis, were cerebral in origin; but it is doubtful whether this indicated the true proportion. Probably many cases of spinal and peripheral palsies have not been recorded. Allyn does not refer to cases of multiple neuritis after measles, but describes several of spinal origin, some of which may just as well have been peripheral, or both spinal and peripheral. One case of Liegard's, quoted by him, may have been in whole or part peripheral. "Between five and six days after the attack of measles began palsy was first noticed by the mother. Nine days later the condition was as follows: In addition to great weakness of the upper and lower extremities, the head fell forward on the chest from palsy of the muscles of the back of the neck. This manifestation had been gradually increasing for two days. Deglutition at the same time became more and more difficult; mastication was also interfered with. The skin appeared to be insensitive to puncture and to pinching." In less than three months the patient fully recovered.

While so large a proportion of Allyn's cases were of cerebral origin, none of the four cases here reported corresponded with any ordinary types of cerebral palsy.

The first was distinctly one of muitiple neuritis, with probably also some rachitis or osteitis. In the second, in which common and special sensibility, as well as motor power and speech, were somewhat affected; and in the other two cases, in which the nerves and muscles of the limbs, throat, and eyes were attacked, the best explanation is one which makes the symptoms dependent upon some disease of the nerves or their nuclei. Commonly these cases, whether after measles, diphtheria, or other infectious diseases, are regarded as forms of neuritis or neuro-myelitis; but they differ from neuritis of the clearly recognizable type in the absence of pain and hyperæsthesia. The senses everywhere were blunted, and the muscles paralyzed, or partially paralyzed in one of the cases, and yet the patient, however uncomfortable, did not suffer directly from pain. A better explanation of such cases is perhaps that which has been advanced by Thompson[4] and others, more particularly with reference to the nervous symptoms and sequelæ of diphtheria, namely, that ptomaines are formed as the result of the changes which the infection produces; and that nerve and muscle affections are the result of toxæmia or poisoning, which causes some degeneration of tissues, but not a true inflammation. These remarks are applicable to all the cases which will be recorded in connection with infectious diseases.

Since the publication of Allyn's paper another case of paralysis following measles has been reported by Carpenter.[5] The patient, three years old, had mild measles, which, however, had been preceded by a scarlatinal affection, also mild. On the third day the child had an attack of stupor with high fever, but in a few days was convalescent, and was then found to be partially paralyzed or inco-ordinate in the right lower limb. Carpenter thought it necessary to make a concealed post-nasal diphtheria responsible for these disturbances; but I do not see why, as the cases here reported. and many others, show that the infection of measles may produce the same paralytic results as that of diphtheria. A case like this would probably generally be regarded as cerebal because of its one-sided character; but the theory of toxæmia and the production of ptomaines would make it equally easy to explain it as peripheral, nuclear, or cerebral. The fact that the child recovered under strychnine in ascending doses would be in favor of its peripheral, or, at any rate, its toxæmic nature.

PARALYSES FOLLOWING SCARLET FEVER.

The next two cases are examples of paralysis following scarlet fever. They are interesting as showing that neuritis was undoubtedly present in both, although the first the palsy that was left was of the hemiplegic type.

CASE V.—MULTIPLE OR DIFFUSED NEURITIS WITH SUBSEQUENT PARALYSIS OF RIGHT ARM AND LEG FOLLOWING SCARLET FEVER.—RECOVERY.

E. S., aged six years, in July had scarlet fever, with which she was very sick for two weeks, and during this time complained of intense pain in the legs and arms. At the end of four weeks, on attempting to walk, it was found that the right leg was weak, and that she was unable to get her foot to the floor on account of the pain the effort caused. Any attempt to extend or handle the foot would bring on intense pain. At the same time she had paralysis of the right arm which was also sensitive. The pain on handling gradually disappeared, and she regained to some extent the power in the leg. When first examined, in November, her right arm and leg were still weak; she could only use the arm when compelled to, and in walking dragged the right foot. The muscles responded to both currents, but with quantitative changes in both arm and leg. Speech was slightly affected. She improved very rapidly under digitalis, strychnine, tonics, and galvanic treatment, and at the end of two months, from November, had regained the complete use of both arm and leg.

This patient had a marked mitral regurgitant murmur, the natural inference from which would be that the right-sided paralysis, or paresis, was due to embolism; but the history of improvement and recovery would not tend to confirm this view. Because a child with scarlet fever, or any other serious infectious disease, develops an endocarditis and valvular murmur, it does not necessarily follow that the paralysis, even if it is one-sided is cerebral. The same toxic or infectious agency may set up both an endocarditis, and either a limited or widespread neuritis, as this case and the one to be detailed next would seem to show.

Most authorities hold to the view that monoplegic and hemiplegic palsies following the exanthemata are due to local cerebral lesions. Abercrombie,[6] for instance, discusses several views, most of which have been alluded to at the beginning of the paper, to account for these cases, but does not refer to multiple or diffused neuritis, or to toxæmia of the nerves and nerve centres. He refers, first, to the theory of Strümpell of a localized polioencephalitis; secondly, to that of hemorrhage, strongly advocated by Eustace Smith, and also by Henoch and Barlow; thirdly, to Goodhart's views of meningeal hemorrhage or inflammation; fourthly, to the theory of thrombosis of the veins and sinuses supported by Gowers; fifthly and lastly, to that of embolism with softening, in explanation of which he cites the authority of Ross and Goodhart, and to which he gives his own adhesion, saying, that in all probability embolism of one of the middle cerebral arteries is the cause of the paralysis that supervenes during convalescence from the acute infectious disorders.

This patient having a positive and persistent cardiac murmur, embolism would be first thought of; but the general pain and sensitiveness which disappeared under time and treatment, and the eventual complete recovery is, as has been stated, against this view, although partial recoveries do occur in cases of embolism.

The next case would seem also to point to the neuritic origin of at least some of the cases of paralysis following scarlet fever. This patient was for several months at the Polyclinic under the care of Prof. H. Augustus Wilson, of the Department of Orthopædic Surgery, having come into his ward because of deformities associated with the paralysis. I am indebted to Dr. Wilson for the opportunity to use the case.

CASE VII.—PARALYSIS OF THE UPPER AND LOWER EXTREMITIES, WITH ATROPHY AND DEFORMITIES AFTER SCARLET FEVER.—RECOVERY OF THE UPPER EXTREMITIES, BUT PERSISTENCE OF PARALYSIS AND ATROPHY IN THE LOWER.

J. D., aged ten years, had always been well until about a year before coming to the Polyclinic, when he had scarlet fever, three days after the beginning of which he had an attack called inflammatory rheumatism, but one which probably could have been more correctly described as multiple neuritis with arthritis and endocarditis. He developed both mitral stenosis and aortic regurgitant murmur. His first complaint was that his feet pained and burned, and later the pain and burning spread to all parts of his legs and then to his arms. In a week he had pain and extreme sensitiveness in the four limbs, in the trunk, and even in the face and head. His sufferings were by no means confined to the joints. The bed clothes had to be propped up so that they would not touch him. His knees were a little swollen for a time, but swelling of the joints was not a marked symptom. He lay helpless for two months, so far as his lower extremities were concerned, unable to move a toe. During this time his arms were also painful and helpless, but not so much as his legs. His condition varied from time to time; both arms were affected; but sometimes one was more painful, helpless, and contractured than the other. For six weeks his head was drawn downward toward one shoulder.

His arms slowly got well. After two months he began to use his left foot and leg, putting it out, kicking, etc., but ten days later he again lost this power after catching cold. The pain came back with renewed force, and was now confined to his lower extremities. In about ten weeks from the time of his first attack his mother noticed that his legs were drawing upward; and this contracturing increased until they assumed a position of extreme deformity, the thighs bent on the pelvis and the legs on the thighs. Wasting of the limbs was not a marked symptom until five months after the first attack. About four months after the first attack he developed bed-sores, one near each trochanter. In July a central ischiatic eschar developed, and this became very large. He never lost control of his bladder and bowels. Electrical examination showed that the muscles above the knees responded to both currents, although the response was depressed. The muscles below the knees did not respond to either current, although they were carefully tested. The patient's present condition might be briefly described as one of nearly complete paraplegia, with atrophy, and degeneration reactions in many muscles, and with also marked contracture deformities.

The case was certainly one of great interest and importance. In the first place, although marked endocarditis occurred and murmurs both mitral and aortic were present, the terrible paralytic condition of the patient was not of the cerebral embolic type. We may have double hemiplegias or irregular palsies on both sides of the body from embolism; but cerebral paralyses do not give marked atrophies and changed electrical reactions, with a history of pain and hyperæsthesia, sacral eschars, etc. The atrophic paralysis was in all probability the result of an inflammatory affection which attacked both nerves and spinal cord, and was due to the action of the infection upon nerves and nerve centres.

The next case had three separate attacks of paralysis before she was eighteen years old, the first two succeeding acute eruptive diseases, and the last being apparently of spontaneous origin.

CASE VIII.—PARALYSIS AND APHASIA AFTER AN ERUPTIVE AFFECTION AT THE AGE OF EIGHTEEN MONTHS.—A SECOND ATTACK OF PARALYSIS AND APHASIA AFTER SCARLET FEVER WHEN NINE YEARS OLD.—FACIAL PARALYSIS OF UNKNOWN CAUSE AT THE AGE OF EIGHTEEN YEARS.

M. A., when eighteen months old, had a fever and an eruption, which the mother said was something like hives. A few days after the beginning of the attack she was found to be completely paralyzed and speechless; she could not raise her head or lift her arms. In six weeks she got so well that she could creep, and continued to regain power very slowly; but her speech did not return for seven months. In the course of a year she was perfectly well, and remained so until she was nine years old, when she had scarlet fever with severe sore throat. Her temperature was high, and with the scarlet eruption here and there were spots like blisters. The day after the appearance of the rash she became speechless and completely helpless. She soon began to walk again, and in a few weeks recovered from the paralysis; but for two years she did not talk. She remained well until five days before coming to the Polyclinic, being then about eighteen years old, when she began to complain of pains in the eyes and back of the head on the left side, and the next morning it was noticed that her face was twisted to the opposite side. Ever since she had had pain in her left eye. On coming to the clinic she had complete paralysis of the left side of the face, but sensation and taste were not affected. The case was treated for some time at the dispensary, and she got nearly well; it was one of the forms of Bell's palsy, the lesion being probably outside of the Fallopian aqueduct. She had for a time degeneration reactions.

Such a case indicates a peculiar vulnerability of the peripheral nerves in some individuals, so that infectious disease, exposure, or any of the numerous causes of peripheral palsies are likely to be unusually effective.

PARALYSIS AFTER VARIOLA.

No case of juvenile paralysis following variola has come under my observation, although Gowers says that spinal symptoms are more common in connection with small-pox than with any other of the eruptive fevers. Except when epidemic, small-pox is, of course, a rare disease, even in large cities like Philadelphia, and for this reason its nervous sequelæ are seldom observed in dispensary and private practice. From analogy we would expect to find forms of organic nervous disease the same or similar to those met with after other contagious or infectious disorders. We find reported by various observers such sequelæ as ocular paralysis, atrophic paralysis of the legs and arms, ataxia, acute ascending paralysis, and aphasia. Among the lesions which have been demonstrated are disseminated myelitis, poliomyelitis, and acute degeneration of the nerves. Welch[7] speaks of having seen two or three cases of aphasia as sequelæ of small-pox, and believes that this affection may be the result of a circumscribed encephalitis. According to his experience, recovery from this speech-defect is slow. No distinction is made by the authors I have consulted as to whether the post-variolous affections occurred in adults or in children; probably they were usually observed in adults. The same pathological agencies are, however, at least as likely to affect the susceptible nerves and nerve centres of youthful patients as those of adults, if the former are unfortunate to suffer from small-pox.

DIPHTHERITIC PARALYSIS.

Diphtheria has probably contributed more cases of paralysis in children than any other infectious disease, possibly more than all of them put together. I have seen a number of such cases, but will include in my series only a few which have presented points of special interest. The first is one of unusual type—a neuromyelitis—a true multiple neuritis concurring with a poliomyelitis, and while the neuritis was recovered from, the myelitis left the child with a form of permanent and serious spinal paralysis. The resulting condition, in other words, presented the usual features of a case of spinal infantile paralysis occurring independently of any of the ordinary infectious diseases.

CASE IX.—MULTIPLE NEURITIS AND POLIOMYELITIS AFTER DIPHTHERIA.—RECOVERY FROM THE NEURITIS, BUT PERSISTENCE OF A SERIOUS TYPE OF SPINAL PARALYSIS.

M. H., aged four years, was well until eleven months before she was first seen, when she began to complain of headache and sore throat. The pain was most severe at the nape of the neck. She also had some fever, and her throat was sore for three days. Her brother had just had an attack of sore throat, and diphtheria was in the neighborhood. In less than twenty-four hours she lost the use of her lower limbs. The fever continued three weeks, and all this time she had pain in her neck. She was completely paralyzed, with the exception of her arms, and was hyperæsthetic over almost the entire body below the arms, the slightest touching or handling causing intense pain. The parents were certain that the child could use her arms during the attack, but were not certain about their sensitiveness. She was at no time unconscious, and never had involuntary evacuations from the bowels or incontinence of urine.

After three weeks she commenced to improve slowly, but at times would have a slight relapse, and it was fully three months before she could sit up alone. At the end of six months, pain and hyperæsthesia had disappeared, and she gradually regained power in her lower extremities; but for three months before coming for examination she had remained in about the same condition. The entire left lower extremity showed wasting, and nearly all the movements of the left leg were abolished. In creeping she partially flexed this leg by some of the thigh muscles. The leg was not flushed, blue, or cold. None of the muscles of the left leg responded to either faradism or galvanism. In the right thigh a few of the muscles were also paralyzed. She was seen but once eleven months after the attack, and improvement had been practically at a stand-still for two to three months.

Paralysis of the ocular muscles would seem to be neither very common nor very rare, and I have brief notes of two of these cases in which an affection of the oculo-motor nerve was associated with other palsies.

CASE X.—OCULO-MOTOR AND PALATAL PARALYSIS, AND PARESIS OF THE LIMBS, FOLLOWING DIPHTHERIA.

F. K., aged eleven years, colored, had diphtheria three months before coming under observation—a very severe attack which kept her in bed for two weeks. She had some paralysis of the palate, with regurgitation, etc., and shortly before she began to go about the house she lost her voice. She also had internal strabismus of the right eye. The grasp of both hands was feeble, and she had partial loss of power in the arms, the deltoid and other shoulder muscles being distinctly affected. In walking, her gait was slow and feeble; she could kick, but could scarcely raise her heel from the floor. At the time of the examination the electrical responses were present. Under faradism and strychnine she improved rapidly.

CASE XI.—OCULO-MOTOR AND PALATAL PARALYSIS, AND PARAPLEGIA, AFTER DIPHTHERIA, WITH ABOLISHED KNEE-JERKS.

J. T., aged three years, white, about two months before coming under observation had diphtheria. A sister and brother died of the disease during his illness. Two days after he got on his feet it was noticed that he had slight stiffness in the right leg in walking, and complained of pain in his head. At night he had screaming spells, and also occasionally vomited. In a week his mother noticed that he was paralyzed in both legs, and a few days after this that he had convergent strabismus. He had slight regurgitation and convulsive cough on trying to swallow. The knee-jerks were abolished. He had no history of pain or sensitiveness in the limbs. He was treated for a short time, with improvement, and disappeared from the clinic.

The occurrence of various types of paralysis at comparatively long periods after diphtheria, and other infectious diseases, has often been noted. Ferguson[8] records a case which began four weeks after complete recovery from the measles, and advanced until the tibialis anticus, the extensor longus digitorum, the peroneus tertius, and the extensor proprius pollicis were almost completely atrophied, and showed extreme reactions of degeneration. In six months from the onset of the paralysis there was a fair amount of recovery; but the calf muscles did not find sufficient opposition and underwent some contraction. Ferguson[8] holds that this case points clearly to the view that such paralyses are due to some poison left in the system by the disease, a poison which acts after the disease itself has disappeared. "We could hardly suppose," he says, "any of the real materia morbi of the disease still existing in the system four weeks after the disease itself had disappeared, and desquamation had been completed, and at a date when no one would regard the person as still carrying any contagion. . . . It is only fair to suppose that the paralysis was due to some agency or poison that was left in the system by the measles."

CASE XII.—PARALYSIS OF THE LEG ONE YEAR AFTER DIPHTHERIA, WITH RECOVERY.—PHARYNGEAL PARESIS AND TORTICOLLIS ONE YEAR LATER.

In this case the patient was not paralyzed until a year after recovery from diphtheria, and two years later had a second localized attack of neuritis, causing a tonic spasmodic affection.

C. M., aged five years, colored, two years before coming to the Polyclinic had diphtheria, with convulsions, at the beginning of the attack. One year afterward he began to lose power in his legs from the knee down, with pain in the right knee-joint. About one year after this, and three weeks before coming under observation, he took cold, and a week later had torticollis, the head moving to right. He had some difficulty in deglutition before the torticollis appeared. At the same time that he began to complain of his neck he complained also of pain in his right arm, which disappeared on rubbing with liniment several times. Tetanic contraction was present in the trapezius muscle as well as in the muscles under it.

It may be questioned whether the relation of cause and effect existed between the diphtheria and the nerve affection in this case; nevertheless, a profound toxæmia might have so affected the nervous system of the patient as to have rendered him liable to such inflammatory and paralytic attacks.

CASE XIII.—SLIGHT PALATAL PARALYSIS AFTER DIPHTHERIA, WITH RENEWED TROUBLE WITH THE THROAT AND RECURRENCE OF THE PARALYSIS.

W. E., white, aged eleven years, school-boy, had diphtheria lasting three weeks. He was sent to the country, and appeared to be well, but in three weeks had symptoms of paralysis of the throat. Under treatment he almost entirely recovered, and was comparatively well when his throat began to trouble him again, and he developed nasal voice and regurgitation of food, but had no definite paralysis of the limbs, or any other groups of muscles than those of the pharynx. He was, however, very weak and easily fatigued.

These five cases of diphtheritic or post-diphtheritic paralysis, with the exception of the first, present in their symptomatology no unusual features. The first, with its persisting palsies, presents the distinctive features of a poliomyelitis. Cases like the others detailed might have been given in considerable numbers, showing various combinations of ocular, palatal, pharyngeal, and limb palsies, with abolished knee-jerk. The common type of diphtheritic parylysis is illustrated by these cases of multiple, or, perhaps what might be better designated, irregularly distributed paralysis. Sensory symptoms, while sometimes present, were not of a decided character, although to a certain extent these may have disappeared before the cases came under observation.

Commonly these cases have been regarded as instances of either neuritis or myelitis, or a combination of these pathological conditions; but even a superficial study of their symptoms shows that this explanation is doubtful. The absence of pain and hyperæsthesia does not accord with the view that an active neuritis has been present, and destructive myelitis is shut out by the history of recovery. Doubtless more or less degeneration of nerve and muscle, and sometimes also of the spinal cord, takes place in these cases, and disappears under reparative processes in the lapse of time and as the result of treatment; but this degeneration when present is probably not secondary to active inflammation, but the more direct result of some other process. Bacteriological investigations and speculations throw some light upon the nature of these cases, and, as indicated in several places in this paper, upon the nature in general of the organic changes which occur during or after infectious diseases. Micrococci and bacteria, of known species, and unknown bodies, have been found in the vessels, and in the nerve sheaths and fibres and centres, by various observers. Inflammation may ensue from the presence of these organisms; or the tissues may degenerate; or the functions of the nerves and nerve centres may be inhibited because of their presence.

With reference to these questions Gowers makes the following significant remarks: "Are these changes the result of some nerve poison left behind by the diphtheritic virus, a poison which multiplies in the body without causing general symptoms, and is certainly capable of infecting another person? Or are they due to the diptheritic poison, bacterial or other, which acts on the nerve elements during the primary disease, although the effect on the nutrition of the cells and fibres does not show itself until some time after the virus has ceased its active ravages? Or are they due to some poison associated with that which causes the throat affection, of a similar nature, but not necessarily proportioned to the latter—indeed, not necessarily co-existing with it—and producing its effects without pyrexia? To these questions at present no answer can be given. But it may be noted that the absence of any relation between the intensity of the diphtheria and of the subsequent paralysis accords best with the last theory, and this is supported, also, by a very remarkable series of facts recorded by Boissarie. In a certain district of Paris there occurred a series of cases of severe diphtheria, and at the same time a series of cases of paralysis of the palate, eyes, heart, etc., perfectly like that which occurs after diphtheria, and accompanied by albuminuria. The remarkable fact is that in these cases of primary palsy there was no history of preceding sore throat, and in several of the cases distinct diphtheria followed the paralysis, which lessened during the throat affection. Some of the cases of primary palsy seemed to arise distinctly by infection."

The explanation of the paralytic and other phenomena, which attributes them to the primary or secondary action of the diphtheritic poison would seem most satisfactorily to account for the conditions; that which assigns a large part to ptomaines generated by the diphtheritic poison has most in its favor. Prognosis and treatment will vary according to the measure which the physician takes of the extent of the primary and secondary changes.

In considering paralysis in children in general, and diphtheritic paralysis in particular, it is a practical point of great importance to remember that occasionally the paralytic affections are due to some infectious agency, even when no history of previous infectious disease can be discovered, as, for instance, in the Paris cases cited from Gowers, in which the paralysis occurred in a series of cases in which the patients had no preceding histories of sore throat. It somewhat frequently happens that cases of paralysis are seen in children during an epidemic of scarlet fever, diphtheria and measles, the children affected with the paralysis, however, apparently not having suffered from the infectious disease.

PARALYSES FOLLOWING WHOOPING-COUGH.

Whooping-cough, while less frequently than most other acute infectious diseases of childhood, the forerunner of paralysis sometimes precedes its cerebral, spinal, or peripheral types. It will be remembered that the first case recorded in this paper occurred after both measles and whooping-cough. The following are brief notes of one case of this kind.

CASE XIV.—NEURITIC PARALYSIS FOLLOWING WHOOPING-COUGH.

F. S., fifteen months old, was perfectly well until five weeks before she came to the service, when she had a severe attack of whooping-cough, and three days before coming to the clinic her mother noticed she could no longer use her right leg. She had never walked, but was in the habit of creeping and using her legs. When the limb was handled she gave evidence of great pain; she also had marked pain in the right hip-joint and in the back. She remained in this condition for nearly two weeks when the pain largely disappeared, but the limb was left paralyzed. Knee-jerk was absent on the right, but present on the left side. She came for treatment only three or four times. When last seen, the paralysis had improved, but some still remained. The muscles did not lose their response to electricity, and the case was probably one of a form of mild neuritis associated with rachitis.

PARALYSIS AFTER MUMPS.

Reports of cases of paralysis occurring after mumps are exceedingly rare. Boas, according to Gowers, has recorded an instance of palsy of accommodation which was met with in only one case in an epidemic. The paralysis affected all four limbs, the legs first. Lancinating pains preceded the paralysis; the deep reflexes were abolished; the muscles gave reactions of degeneration, and slight pressure caused pain. The paralysis continued for four months and got well under iodide of potassium. Gowers suggests that in each of these cases undiscovered diphtheria may have been present. In Joffroy's[10] case slight angina was observed.

CASE XV.—PARALYSIS OF THE LEFT LEG FOLLOWING SWELLING OF THE RIGHT PAROTID GLAND.—PERSISTENCE OF THE PARALYSIS.—PROBABLY BOTH NEURITIS AND POLIOMYELITIS.

C. B., aged five years, in July had a swelling of the right parotid gland, which extended in front and around the ear. She had no fever, and did not complain of pain; the swelling lasted twenty-four hours, and, as it was passing off, it was found she was unable to use the leg, which was cold and very sensitive to touch. The mother said the sensitiveness extended from the hip downward, but was more marked below the knee than above it. This condition gradually disappeared, and when seen in September, the hyperæsthesia was entirely gone, but most of the muscles below the knee were paralyzed and atrophied; and to a less degree those above. She had a recurved knee. She could pull her heel up and bend her toes partly under, but could neither dorsal flex, abduct or adduct the foot. The muscles most affected were the anterior tibial, the extensor proprius pollicis, and the extensor longus digitorum. She could feebly flex the thigh on the leg, the sartorius and a portion of the quadriceps extensor being paralyzed. She walked with a flat everted foot. Knee-jerk was absent, and degeneration reactions were present.

This case presents the typical features of a spinal infantile paralysis, and the parotid swelling may have been a coincidence. Under several months' treatment the paralysis was but slightly improved.

PARALYSIS DURING THE INFLUENZA.

During and following the influenza many forms of nervous diseases, functional and organic, have occurred, and not a few of these have resulted in paralysis of some type. Neuritis, myelitis, cerebritis, meningitis, and combinations of these inflammations have occurred, but I do not know of any case in children, resulting in paralysis, which have been reported, although such are probably on record.

At the height of the recent epidemic of influenza I saw a case which presented the features of a multiple neuritis, at first attacking both legs, but after several weeks the patient, a boy, six years old, was left with paralysis of the anterior tibial and extensor proprius pollicis of the left leg. The case in all its features corresponded to a localized poliomyelitis. An unusual number of cases of juvenile paralysis were brought to the Polyclinic during the declining months of the epidemic of influenza, but whether the epidemic influence had anything to do with their production is uncertain.

MALARIAL PARALYSIS IN CHILDREN.

Some interesting observations have been made on multiple neuritis in children, the result of malarial poison, by Gowers, Chapin, and Browning.[11] Chapin[12] refers to three such cases, one in a boy, thirteen years old; another in a boy, aged five years and six months; and a third in a girl, nine years of age, all of which recovered under anti-malarial treatment. The limbs of all these cases were painful, and paraplegia and paraparesis were present. Chapin believes that in cases of paralysis in children, in which pain has been a prominent and persistent symptom, where loss of power has perhaps been gradual and ascending, and where there has been slow but complete recovery, but without deformity, a careful investigation will generally reveal a peripheral lesion the cause of the trouble. Browning also gives several cases presumably of malarial origin, and discusses the nerve complications and sequelæ of malaria. He records various observations on neuritic malarial paraplegias: "The main complaints from which they are brought is that the legs have become weak and paralyzed. The children have been too young and uncommunicative to say whether it was tenderness and pain that interfered with their walking. They object to making attempts, and when stood up remain where placed with feet somewhat apart, or make clumsy attempts at progress and drop down helplessly." I have seen one case of paralysis of the arm, leg, and face which may have been of malarial origin; there was, at least preceding the attack, a history of chills and fever of the tertian type.

PARALYSIS AND LOSS OF SPEECH DURING AND AFTER TYPHOID FEVER.

Typhoid fever in children as well as in adults is sometimes followed by paralysis. At the meeting of the Association of American Physicians in Washington, in September, 1888, Ross,[11] of Montreal, read a paper on Some Forms of Paralysis after Typhoid Fever. In the discussion of this paper many interesting facts and views were elicited. Starr thought that while neuritis and paralysis were often due to infectious causes, the former was an infrequent sequel of typhoid fever. Osler and Wood believe that typhoid fever might light up either a neuritis or a myelitis; and Delafield that the poison of the severe infectious diseases caused acute degeneration to which might or might not be added inflammatory changes. Ross showed that while typhoid fever was a great strain on the nervous system, causing general exhaustion and anæmia, in addition, it produced sometimes nervous lesions which consisted usually in interstitial neuritis, but also sometimes in parenchymatous degenerations of the spinal cells and cerebral cortex, the results being recoverable paralysis, paraplegia, and sometimes loss of sensation. They were undoubtedly caused by the typhoid poison, not by the fever, exhaustion, or anæmia. The nervous phenomena were all most invariably both motor and sensory, and mainly the nervous injury was manifested by pains, areas of increased cutaneous sensibility, and paralysis. Ord, in the discussion of the paper of Ross, spoke of loss of speech during typhoid fever. He had seen cases after severe attacks, in which patients had spoken at the rate of a word every two or three seconds; he had also seen a patient come out of a condition of uneasiness, be unable to speak at all, and recover the power of speech only after a few days. In one case he found the patient not only unable to speak at first, but that he had also lost the faculty of remembering words, and had to learn to speak over again. This was more likely to occur in young children from seven to eight years of age; in one case the process of learning to speak had to be recommenced and developed as originally. He thought that the changes were in the central nervous system rather than in the periphery, that there were inflammatory changes penetrating the tissues.

As occurring during typhoid fever, Gowers mentions first, sudden hemiplegias, the result of vascular lesions, which may either persist or pass away, according to the position of the lesion; in children especially, convulsions usually attend the onset of these cases. Besides these cases the most common nerve symptoms indicate a special influence of the poison on the brain; among these are deafness and loss of power of speech. According to Gowers, there is generally complete speechlessness, and although it is called aphasia, it is not a disorder of speech such as occurs in organic disease of the brain. In one case under his observation the condition developed gradually by disuse of the lips, which were dry and cracked; the loss of the labial articulation rendered the words almost unintelligible, and they gradually ceased to be uttered. The condition may last for some weeks, and in one recorded case it was associated with general choreic movements.

Dr. C. S. Turnbull has kindly furnished me with the notes of the following case:

CASE XVI.—HEMIPLEGIA DURING THE COURSE OF TYPHOID FEVER, AND LOSS OF SPEECH DURING CONVALESCENCE. —RECOVERY.

In April, 1889, E., nine years of age, was suddenly attacked with high fever. In two days she had petechia, followed by epistaxis and headache, but she had no abdominal symptoms except gurgling at the iliac fossa. The attack lasted three weeks and was characterized by subnormal temperature in the early morning. Other symptoms were not marked.

In April, 1891, just two years later, she was attacked as suddenly, in the midst of apparent health, with fever, and in forty-eight hours her temperature was 102.2° F., with muttering delirium; tympanites was marked and alarming. She had some loose passages, but no typhoid stools until after the first week of her illness. Grave pneumonia succeeded, and the attending physician feared she would succumb to lung choking, but he used oxygen with good effect, also stimulants and muriatic acid. Her temperatare ranged high, 104°, or even more. Ice was kept on her head constantly for two weeks. She had but little ability to swallow and was markedly deaf, but responded to a loud voice; she had no middle ear complications.

After the muttering delirium ceased, about the middle of the second week, the patient made no sound except now and then a cry as if in pain; soon after she smiled, made a little noise, and followed with her eyes persons about the room, and the movements of the lips. The paralysis gradually passed off about the sixth week, and one Sunday, when alone with the nurse, she said "pug dog," which were the very last coherent words she spoke when nurse No. 2 was brought in on the third day of her illness. Nurse No. 1 said: "E., who is coming up-stairs?" E. said "pug dog," and laughed.

About the third week partial paralysis of the left arm and shoulder was noticed. Massage and friction were employed. Deafness occurred with the partial paralysis, but did not remain after the third week, after which also consciousness of her suroundings returned.

In the first attack she was attended by Dr. J. C. Wilson, who pronounced the affection surely typhoid fever. In the second attack, Dr. Wilson was consulting physician, and said the case was decidedly a high temperature typhoid, as the first had been a low temperature. At the present time, May, 1892, no nervous symptoms remain, except at times a little hesitancy in speaking; that is, when telling a story, or when perhaps embarrassed by listeners.

CASE XVII.—LOSS OF SPEECH DURING THE COURSE OF TYPHOID FEVER.

I have had the opportunity of seeing one case of aphasia, or, of at least, of the loss of speech and the ability to recognize spoken words, which occurred during the progress of typhoid fever. This patient was a child, five years old, who, in the second week of a severe case of typhoid fever, ceased to talk for eleven days. She did not say a word, and with few exceptions did not appear to understand what was said to her. She apparently recognized persons and familiar things around her, but could not name them, and mostly did not seem to understand names spoken in her presence. The names of her little brothers seemed to be entirely unrecognized by her. In the latter part of the third week of her disease her speech began to return; the first words she spoke were on May 10th. When asked if she wanted an orange, she in no way indicated that she knew what was meant; but when she saw the orange she recognized it and wanted it. On the 12th, when given milk, she struggled against it, but finally said, "I will take it." This was her first sentence. May 13th there was decided improvement; she asked for a drink in a hesitating way. When asked whether she wanted a doll, she nodded her head, and said: "Big doll, John's." May 14th she had a slight relapse; she did not speak, and did not seem to understand so well as the day before. On May 15th improvement was again decided; she could talk without difficulty, but had to stop and think before she could say anything. She then continued to improve and had no difficulty in talking. This patient had no form of paralysis, motor or sensory, but was exceedingly weak in her limbs for a long time after her recovery.

One case of paralysis which followed typhoid fever was treated by me for several months.

CASE XVIII.—PARALYSIS FOLLOWING TYPHOID FEVER.

R., six years old, was ill for nine weeks with typhoid fever. Her convalescence was tedious, but she got on her feet; and two months after recovery her mother noticed that she fell frequently, but it was not at first suspected that she was suffering from paralysis. After this weakness had been observed for about a week or two, she was carefully examined, and it was found the left leg was partially paralyzed and somewhat smaller than the right. She was then put upon massage and electricity, with tonics internally, and made considerable improvement.

She was first seen by me nearly four years after the attack of paralysis, having in the meantime been treated at intervals with electricity and massage. The left lower extremity appeared to be distinctly smaller than the right. The following measurements were taken:

From ant. sup. spinous process to patella, right,	32.25	inches.
" " " " " " " left,	32.25	"
" patella to internal malleolus, right,	29.5	"
" " " " " left,	29.00	"
At right instep,	6.5	"
" left "	6.1	"
" right metacarpo-phalangeal articulation,	6.5	"
" left " " "	6.1	"

Examination of particular muscles showed that the loss of power was chiefly in the extensor proprius pollicis, extensor longus digitorum, tibialis anticus, and sartorius muscles of the left side. Reactions to both faradism and galvanism could be obtained in the muscles, however, but the responses to the current were depressed. It was particularly difficult to get a response in the tibialis anticus.

In walking, the foot was carried nearly straight, or, if anything, slightly inward; knee-jerk and muscle-jerk were present on both sides. When the treatment was stopped the muscles seemed to be gradually gaining power and their electrical properties.

The true nature of the case would seem to be somewhat doubtful. The responses to the electrical current were not typical degeneration reactions, but the case in other features did not seem like one of cerebral type, and it may be that the nerves and spinal centres, at first affected, had under time and treatment largely regenerated.

According to Gowers, limited atrophic paralysis sometimes occurs in typhoid fever, especially during convalescence, and he believes that in some cases the lesion is acute anterior poliomyelitis. As in other cases of poliomyelitis considerable amount of recovery occurs, but permanent atrophy of some muscles is left. This affection, according to him, is more frequently secondary to typhoid fever than any other acute specific disease, although he believes that many of the post-typhoid fever paralyses are due to multiple neuritis. He cites a case of Alexander's in which typhoid' fever was followed by wasting of muscles with loss of electrical irritability, and of the knee-jerk, and of one vocal cord, and in which the development of the palsy was accompanied by severe pain in the legs. This patient completely recovered. He believes also that the atrophy which follows typhoid fever is local; the symptoms are neuritic rather than spinal.

Paraplegic weakness, according to Gowers, is not uncommon, especially when the disease is on the decline or during convalescence. Money has found that there is usually an excess of myotatic irritability during the disease. In other cases actual paraplegia comes on rapidly with spinal tenderness, hyperæsthesia, and other sensory manifestations, the symptoms being probably due to a slight myelitis. Even acute ascending paralysis and death have been known to occur.

Various interesting points as to pathology, diagnosis, prognosis, and treatment arise in connection with the study of a series of cases such as has been presented in this paper. To some of these attention has been directed in the body of the paper, and, in concluding, I will again briefly refer to them, and will consider also a few additional features of practical interest.

Some of these cases show the occurrence of either neuritis alone, or poliomyelitis alone, or both of these diseases conjointly, during or following affections which are universally recognized as contagious or infectious in character, namely, measels, scarlet fever, diptheria, whooping-cough, mumps, etc. These facts suggest the idea that all cases of this type of infantile and juvenile poliomyelitis may be infectious in origin, and their well-known mode of onset would favor this view. The initial symptoms, as given by Sinkler,[11] are fever and vomiting, diarrhœa, restlessness, and cries when moved or handled —paralysis soon following. Reasoning by analogy, it would seem that if poliomyelitis, with or without multiple neuritis, occurs after well-known infectious disorders, so, also, poliomyelitis of the usual type, ushered in by special febrile symptoms, may be infectious in nature. That this latter affection seldom occurs as an epidemic may seem to be against the view of its infectious origin, but I have found at least one record of such an epidemic in an article by Sinkler, who refers to an epidemic of infectious poliomyelitis, reported by Cordier, who saw thirteen cases between June and July, 1885, in a district containing fourteen or fifteen hundred inhabitants. The patients who survived showed the different characteristics of the affection. The fever was variable; convulsions occurred in about one-half the cases; profuse sweating was also observed; and the paralysis was present after the second or third day, in all four extremities at the same time. In some cases the neck muscles were paralyzed; in others the children were unable to nurse or cry. The gray nuclei of the ventricles were probably involved in fatal cases. In the cases which recovered paralysis did not disappear with equal rapidity; in some there was improvement and gradual disappearance of the paralysis, which finally remained fixed in a single muscle or group of muscles, while in other cases atrophy and deformities remained.

Cordier regards the disease as having been due to an infectious agent, inspired with the air, and gives facts to sustain this position; but Sinkler is not inclined to accept the theory of infection. Bearing upon this question are a number of facts which have been recorded regarding the nature of the organic nerve lesions which occurred during or as a sequence to influenza, which included many cases of neuritis both multiple and localized, and a few of poliomyelitis and polioencephalitis.

Jacobi,[16] in discussing the etiology of ordinary anterior poliomyelitis, mentioned as one almost certain cause, the presence of some poison in the blood, and gives some interesting cases in support of this view. She says, however, with reference to the theory that all cases of acute infantile paralysis are due to a specific infecting agent, that the occurrence of the spinal accidents after the ordinary infectious disease, as scarlatina and measles, should as well indicate that a specific agent proper to itself was at least not essential to its development.

From a study of the eighteen cases reported in this paper, and the brief references made to the literature of this subject, it will be seen that the lesions present in the paralyses of infectious disease may be cerebral, spinal, or neural, or may affect at the same time several portions of the nervous system. Any of these forms of paralysis, as has been pointed out, in connection with several cases, may be classed as toxæmic, that is, due to the action of poisonous organisms, either directly or indirectly, but not necessarily giving rise to inflammation of either the nerves, the cord, or the brain. The changes in structure and the symptoms, are, in other words, dependent upon some poisonous agent, probably a ptomaine or ptomaines generated by the specific infection of the disease. In all cases this morbific agent plays its part, but in a large percentage the pathological process does not go on to the setting up of true inflammation.

Some cerebral cases are clearly the result of hemorrhage, embolisms, etc., whatever may have been the steps which have led to the occurrence of these lesions. A few of these cases are probably forms of true encephalitis, localized or more or less diffused. In many of them, however, the functions of the brain would simply seem to have been arrested or inhibited by toxic agency.

With regard to spinal cases, it is only necessary to say, that some of them are of the type of either poliomyelitis, or a more diffused myelitis. These cases differ largely in severity and destructiveness, from cases of the mildest type with speedy recovery, to those which go on to greater or less destruction of the anterior horns.

Local, diffused, or multiple neuritis somewhat frequently occurs during or after infectious diseases, and may be associated or not with spinal or cerebral disease. Some striking examples are given in this series of cases.

The mistake must not be made by supposing that every case of paralysis, cerebral or spinal, in which pain, or even neuritis, is present in the paralyzed members, has been originally a case of concurrent neuritis and poliomyelitis, or neuritis of any kind. In a considerable percentage of cases of paraplegia, hemiplegia, etc., from spinal or cerebral lesions—hemorrhage, thrombosis, tumors, myelitis, etc.—the limbs which are the seat of the paralysis become also the seat of intense pain, both spontaneous and on handling. The neuritis in these cases is sometimes secondary and is the result of mechanical or other causes. The arm or the leg, for instance, unsupported by the muscles which usually hold it in position, is dragged partly out of the socket, and the nerves are subjected to twisting and stretching, and a traumatic neuritis is originated. I have seen several cases of this kind at the Polyclinic, and in visiting the wards of the Philadelphia Hospital.

The diagnosis of the infectious paralytic affections in children might be made to cover the consideration of all or almost all juvenile palsies. Those cases of paralysis associated with arrest of development, or active lesions of the brain, or its membranes, are not likely, except by the accident of coincidence, to be confused with the infectious paralyses. These cases have been thoroughly considered by Osler,[16] Sachs, and Peterson, and others.

The infectious palsies are to be separated from numerous other paralyses and dystrophies of children, as Friedreich's ataxia, the muscular atrophies, and pseudohypertrophies, etc., to which attention might be first directed shortly after the occurrence of one of the infectious diseases of children. It is only necessary to bear in mind this possibility, and to make a careful examination both into the history and symptomatology for such degenerative diseases. Even locomotor ataxia of the ordinary type may develop in childhood, and the paralytic and ataxic disorders of infectious diseases have not a few symptoms in common with these cases.

The affection which has been described by Berg[17] as rachitic pseudo-paraplegia must sometimes be separated. These rachitic patients are often unable to walk, or are extremely weak, but they have the general signs of rachitis in the condition of the sternum, spine, ribs, liver, etc. They may even exhibit tenderness of the muscles and bony prominences, making them thus far simulate neuritis; but close examination will show that the muscles are not really paralyzed or atrophied. The electrical reactions are normal, and these patients usually get well soon under the influence of fresh air, good food, cod-liver oil, and preparations containing iodine, such as Lugol's solution, syrup of the iodide of iron, and hydriodic acid.

Taylor[18] has put on record two children in the same family suffering from pseudo-palsy of rickets, with an interesting family history. These children propelled themselves along the floor by means of their hands pressed down on either side of them, sitting and giving their bodies a forward push, they then put both hands forward and sprang their bodies through the arch of their arms, and so really made very good speed. They all showed the superficial features of rickets; a flattened head and face, slightly curved long bones, cup-shaped chests, beaded ribs, etc. The family had been a very prolific one, usually six to seven children to each of them, and yet a score or more of these children were known to slide along the floor, just as these did, until three or four years of age, when they gradually attained the use of their legs.

With reference to the diagnosis of these cases, Taylor says there will be none of the ordinary symptoms of true palsy present, and the knee-jerk should be normal, although the knee-jerk in young children is subject not only to individual, but to accidental variations.

While discussing this question of the diagnosis of rachitic pseudo-paralyses, it might be well to note the fact that in children of the rachitic or strumous diatheses, the infectious diseases will not only give rise to paralytic disorders, but will also sometimes develop active rachitic or scrofulous affections of the bone, liver, and other tissues and organs. The following two cases, although not included in the series, are of interest in this connection:

A boy, nineteen months old, who had learned to walk, had scarlet fever with which he was ill two weeks. After that he had lost the ability to walk, but had learned to stand up by a chair, and move himself around the floor. When two years old he had whooping-cough, and again became paralyzed in both legs. When he appeared at the Polyclinic a few months after this, he was entirely helpless in both legs which were wasted, and the muscles failed to respond to faradism or galvanism. He also had a prominence in the lumbar region, such as is sometimes left after osteitis and caries. The patient was only brought a time or two to the service, and the case was not fully studied; it was probably one in which both cord and bone disease had originated in a strumous child under the influence of two infectious diseases.

Another little patient, seventeen months old, six months before coming to the clinic had scarlet fever, and two months later had measles, after which it was noted that his head was turned constantly toward the left side. He showed want of development on the right side, more marked in the arm, and marked curvature to the left in the dorso-lumbar region. His abdomen was protruding and he had an enlarged liver; his ribs were beaded and he was rachitic in general appearance; his head was twisted to the left and slightly backward. It is probable that more or less of his torticollis was present as part of his general condition before his attack of scarlet fever or measles.

Almost any form of paralysis may occur in children as the result of hysteria, and such hysterical palsies are perhaps more likely to occur after exhausting diseases. The presence of peculiarly disturbed anæsthesia, of spastic seizures or contractions, and of other hysterical symptoms, and the non-involvement of the reflexes, superficial, deep or organic, except in the way of a slight exaggeration, and the result of treatment will assist in making the diagnosis, as has been pointed out by Hun.[19]

Occasionally hysterical paralysis or other hysterical phenomena, are developed after infectious diseases, probably not because of any specific action of the poison of the disease, but rather owing to the general nervous weakness produced in a hysterically predisposed patient by a severe illness. A case of this kind is reported by Mills[20] in the "American System of Practical Medicine," and as this patient was for some time in attendance at the Polyclinic service, I will briefly refer to the case. Three months before first coming to the Polyclinic she had a sore throat with difficulty in swallowing and some regurgitation of food. By one of her medical attendants the case was regarded as diphtheritic. She developed a train of hysterical phenomena which included aphasia, a false pleuro-pneumonia, partial paralysis of the arms, numbness of her legs and feet, facial spasm, clonic torticollis and dilatation of the pupils, diplopia, blepharospasm, false luxation of the elbow, and dyspnœa.

The comments which are made on this case are sufficient to emphasize this diagnostic point, that it is important not to confuse in children or in adults, the hysterical palsies which occur after infectious diseases, with toxæmic or organic paralyses. The case was supposed by one of the attendants to be diphtheria. Subsequently she developed, over a period of many months, a train of remarkable hysterical symptoms, including in succession aphasia and pseudo-pneumonia.

"The patient's train of symptoms began with what appeared to be diphtheria. The fact that she had some real regurgitation would seem to be strong evidence that she had some form of throat paralysis following diphtheria. She was of neurotic temperament. From the age of seven until ten years she had had fits of some kind about every four weeks. Because of her sore throat and subsequent real or seeming paralytic condition, she came to the Polyclinic, where she was an object of interest and considerable attention, having been talked about and lectured upon to the classes in attendance. Whether her first symptoms were or were not hysterical, those which succeeded were demonstrably of this character. Frequently some real disease is the starting-point of a train of hysterical disorders."

The prognosis of the juvenile palsies which accompany or follow infectious diseases is of great importance. The history and character of each case must be carefully studied before a prognosis is given. While a large majority of infectious paralyses are undoubtedly curable, some are permanent or can only be partially remedied by time and treatment. The necessity of distinguishing among cases not only as to their location in the brain, spinal cord, or peripheral nerves, but also as to their nature and extent is here apparent. The cases few in number, due to central hemorrhage, embolism, etc., will be permanent or will make only partial recoveries. How far central inflammatory affections, such as encephalitis and myelitis will improve, can only be determined by the severity of the symptoms and the lapse of time. Cases of uncomplicated neuritis are usually of hopeful prognosis, although judicious treatment is of great importance, and the paralyses may persist for a long time. The numerous cases of multiple neuritis or irregularly distributed palsies which have been so often referred to, and which for want of a better name may be simply classed as toxæmic, present a favorable prognosis, even when they are apparently of a most serious type.

The treatment of the epidemic and post-infectious paralyses of children is a subject of the greatest interest to every practicing physician who has to deal with children or with nervous affections in general. The prophylaxis of such palsies is of great importance. It is probable that in a comparatively large number of cases the development of their paralyses might be prevented by active and appropriate treatment. Usually it has been considered that no agent has any particular influence on the underlying morbid process, but this is probably not correct. The active use of remedies like the bicarbonate or citrate of potassium, mercury, and the salicylic compounds, at the right stage, and properly supported by tonics and nutrients, might perhaps do much toward preventing the occurrence of serious nervous lesions which are apparently toxic or bacterial in origin.

Special lines of treatment must, of course, depend upon the peculiarities of special cases. When a well-defined multiple or diffused neuritis is present, absolute local rest should be enforced until the signs of inflammation have subsided. The limbs should be splinted with sand-bags, and should be handled with the greatest care. The salicylates, iodides, and mercury should be used internally, but with caution. Hot douches to the limbs and dry warmth between these application will be found very useful. Generally the treatment laid down in neurological text-books should be followed. The toxic or toxæmic palsies without pain and hyperæsthesia will do best on the internal administration of drugs like strychnine, arsenic, quinine, and iron. The presence of the rachitic or the strumous diatheses should always be taken into consideration, and if present, cod-liver oil, iodine preparations, and nutrients, with fresh air, should be ordered.

In the chronic stages of these disorders the use of faradic and galvanic electricity, massage, Swedish movements, and systematic gymnastics, after the method commonly advocated for diphtheritic and other forms of infectious paralyses, should be persistently pursued.

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HYPNOTISM AND HYSTERIA.

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THE ROLE OF HYPNOTISM IN THERAPEUTICS.

[*Continued.*]

IT is time to bring hysteria and hypnotism together and to search for connecting links between the two conditions. The physicians who assert that hypnotism is a physiological condition content themselves by noting that many hypnotizable subjects have never presented in their antecedents hysterical manifestations.

Without speaking here of errors of diagnosis, which have been committed too often in this regard and to which I will return later, I should here call attention to the fact that the absence of all hysteric symptoms does not require the rejection of the existence of an hysteric diathesis which may exist in a latent condition.

It seems to me more logical in forming an opinon upon this subject to pass in review the different characteristics of hypnotism, and see if they have analogies with those belonging to hysteria. 1st. We will first consider the somatic phenomena, anæsthesia, relaxed paralysis, contractures, and catalepsy.

Those phenomena, according to our conception of hypnotism, exist always, at least in part, in hypnotism. They constitute, on the other hand, the most common manifestations of hysteria.

Now these two conditions are identical from the point of view of their symptomatic aspect. I do not speak only of patients, who, before having been hypnotized, presented hysterical manifestations, for one could say in these cases that hypnotism has only caused the return of the old troubles; my assertion applies also to those who before having been thrown into hypnotic sleep have never been attacked by hysterical manifestations.

These phenomena resemble each other also in what concerns their evolution, for in both cases psychic influences may cause them to appear and disappear.

The exaltation of suggestibility, a fundamental charteristic of hypnotism, belongs also to hysteria.

You are aware that M. Charcot, in his lessons (Œures completes, vol. iii., p. 334. et suirant) has shown by a rigorous analysis of facts, and by experimentation upon hypnotics, that hystero-traumatic paralyses are identical with those which may be made to appear in hypnotized subjects, and that in both cases suggestion constitutes the mechanism of their development.

3d. Hypnotic somnambulists are sometimes plunged into a second psychic state. Now you have just seen that hysterical somnambulists may be in a similar condition.

These different characteristics upon which I have insisted throughout this lecture, establish an intimate relation between hypnotism and hysteria. But I can furnish you with other proofs the result of observations of which I have not spoken.

4th. Here is an argument of chemical order: according to MM. Gilles de la Tourelle and Cathelinean, the hypnotic state influences the urinary excreta for twenty-four hours in the same manner as a hysterical attack; in both cases a diminution of the volume of urine is observed, a decrease of all the urinary excreta, urea, phosphates, with inversion of the formula of the latter. (See Progrès médical, 1890, vol. i., pp. 332, 333.)

5th. The therapeutic influence of hypnotism is shown to be more efficient in troubles which arise from hysteria. I will try to justify this assertion in the second part of this lesson.

6th. There exists between hypnotism and hysterical manifestations an equilibrium analogous to that which may be observed among the different symptoms depending upon hysteria.

The convulsive crisis often diminishes in intensity and frequency when patients are hypnotized with a purely experimental object in view, even when one abstains from making curative suggestions during the hypnotic sleep.

I have also had, at different times, occasion to observe in case of subjects, habitually very easy to hypnotize, the complete disappearance of this aptitude when some new hysterical syndrome manifests itself. Here, for instance, is a patient who ordinarily can be hypnotized in a few seconds; one day rhythmic chorea manifested itself. I tried to put her to sleep in order to relieve her of this disorder, but I could not accomplish it even with persistance. The chorea disappeared four days after its appearance, and the patient became hypnotizable as before.

Hypnotism seems to play the rôle of an equivalent to certain hysteric syndromes.

7th. Finally the hypnotic attack, excuse the expression, is sometimes mingled with a hysteric attack. I have just presented a patient to you, who, when influenced by fixation of vision, may be plunged into a crisis of hysteric somnambulism. I have also shown you that latent hypnotic properties existed in him at the same time.

Now I can succeed in rendering these properties predominant, and bring out the characteristics which belong to somnambulism. I proceed as follows: I show the patient a hypnotized subject, telling him that I will put him to sleep in the same manner, by looking him straight in the eyes; that he can, by an effort of will, repress the violent movements which he makes, and that he must obey me.

I hypnotize him, and you see that the patient now presents an entirely different aspect. He is docile and tractable; sensorial hallucinations may be made to appear to him by suggestion, also anæsthesia, contractures; and they can be made to disappear immediately after. He makes no contortions and has no deliriums. Nevertheless, if I leave him to himself a little while, it will be observed that he becomes agitated; he murmurs a few words, and a spontaneous delirium develops anew. In this case, contrary to what you have seen at first, hypnotism occupies the first place in the picture; but hysteric somnambulism is still present, though masked.

One may thus, at will, show either the phenomena which belong to the domain of hysteria, or those decidedly belonging to hypnotism; but decidedly these two orders of manifestations are associated.

For all these reasons it seems to me impossible not to see a close relation between hypnotism and hysteria, and one would almost have the right to affirm that hypnotism is a manifestation of hysteria.

At the same time the ideas which I have just presented to you are not accepted by all physicians. M. Bernheim, whom I select because he is at the head of the adverse school, affirms that hysteria has nothing to do with hypnotism, which is a physiological property.

Hypnotism would be in some sort a function of man, who might then be defined, as M. Charcot has humorously remarked—a reasonable and hypnotizable animal. M. Bernheim has published two great works upon this subject: the first entitled "Suggestions and its Application to Therapeutics;" the second, "Hypnotism, Suggestion, and Psychotherapy." I should say that the attentive perusal of these two books has not modified my views, and I would even assert that I found in these material for fortifying the ideas which I defend.

But, gentlemen, is it not astonishing that upon this subject so profound an antagonism of views is possible? How is it possible that what appears white in Paris should appear black at Nancy?

There is occasion for asking ourselves whether there was not some initial misunderstanding from which this disagreement arose. It is not difficult when one has read the works of which I have just spoken, to determine the cause of this difference.

As I have shown you in the beginning of this lesson, it is indispensable, in order to discuss the relations between hypnotism and hysteria to first have a precise idea of the significance of each of these terms.

You know our ideas upon this subject. Let us now examine those of M. Bernheim, and see in the first place what his conception of hysteria is. You can judge of it in some degree by a few quotations.

"It must not be believed," writes M. Bernheim, "that the subjects acted upon are all neuropaths, the feeble-brained, hysterical subjects, women; most of my observations have been made upon men whom I purposely chose in order to answer this objection." (De la Suggestion, p. 6.)

This sentence is very clear, stripped of all ambiguity, and signifies that in M. Bernheim's opinion men cannot be hysterical.

Now it is not necessary to remind you that through the labors of M. Charcot the existence of masculine hysteria is definitely established, that this opinion is actually adopted by all the physicians of France and other countries,—that it has been absolutely classic,—and that from statistics it seems to be proven that hysteria is more frequent in men than in women. The fundamental argument upon which M. Bernheim rests his thesis has no value.

This passage, which I have taken from the work upon Suggestion, figured in the edition of 1886. Now at this time the first lessons of M. Charcot upon masculine hysteria had already appeared; but this was an entirely new idea, and one might understand that the professor at Nancy had not yet heard of the work at Salpêtrière. But what is quite inconceivable is, that this passage was retained in the corrected and enlarged edition of 1891, or at least that it was not made the subject of an additional note, in which the author acknowledged his former error.

It is true that among the new observations which he published in this second edition and in his book upon Psychotherapy, there are some which relate, according to his own diagnosis, to masculine hysteria. But then there is a flagrant contradiction between the different parts of the work, and it would be interesting if M. Bernheim explained himself concerning it.

The following is a suggestion found on page 532 of the book on Suggestion:

"Rheumatic paralysis of the forearm and of the right hand, complete restoration of the sensibility, and partial restoration of mobility at one sitting. Complete cure in four sittings."

G. (Jean Baptiste), forty-nine yeras old, laborer, was in a café, June 21, 1884, at six o'clock in the evening, when he suddenly felt that he could no longer raise his right hand; the fingers and lower third of the forearm were anaesthetic, and there was a sensation in them of fullness and heaviness. Seven years ago he had articular rheumatism localized in the upper extremity; the pain and swelling lasted four days, then disappeared; but the arm remained paretic six weeks. In G.'s case there was no syphilitic or alcoholic antecedents; he works in damp surroungings. Diagnosis: rheumatic paralysis.

He came to the hospital for four days, and his arm was treated with electricity without result. He then consulted my former chief of clinic, Dr. Emil Terry, who pronounced it complete paralysis, with anæsthesia of the arm; the patient could not make the least movement. He hypnotized him (deep sleep); upon waking, the sensibility was restored, and the patient was able to raise the hand, etc.

This is, as you see, a case of complete brachial monoplegia, with anæsthesia, which developed after four sittings of hypnotism. M. Bernheim makes the singular diagnosis of rheumatic paralysis, and does not even discuss that of monoplegia, which for my part I should not hesitate to admit.

Here is another observation which you will find on page 445 of the work upon Psychotherapy, from which I have taken the following passage:

"*Infectious Pneumonia, with External Ostitis.—Infectious Dorso-Lumbar Myelitis.—Instantaneous Amelioration by Suggestion.—Rapid Recovery.*

"I try to place the child upon its feet, he cannot stand alone. When he is supported, his body inclines backward; if an effort is made to make him walk, by holding his hands so that he will not fall, he advances by sliding his feet over the floor without making any articular movement; in spite of all my efforts, he cannot stand alone nor lift his feet from the floor. I make him lie in his bed; I find that being in bed, he executes all the movements; there is no stiffness, but the tendon reflexes of the foot and knee are exaggerated, especially those of the feet. A reflex tremor is produced which continues indefinitely. The sensibility is normal. The child has no vertigo.

"*Diagnosis.*—Pneumonia of the left apex. Diffuse infectious dorso-lumbar myelitis in the pyramidal tracts, or partial transverse myelitis with descending irritation of the pyramidal fasicles."

Let us add that there are no trophic troubles, no bladder or rectal troubles, and that the reflex tremor. has completely disappeared at the same time as the paralysis, about fifteen days after the entrance of the patient at the hospital.

In the presence of such a symptomatic list, it seems to me at least rash to give the diagnosis of infectious myelitis. The hypothesis of astasia of hysteric origin[1] much more probable, and meriting in any case a serious discussion, does not seem to have presented itself to M. Bernheim's mind.

I confess that it has been impossible for me to gather from the two works of M. Bernheim, his exact idea of hysteria, but in any case the passages cited above suffice to establish that his conception of hysteria differs from ours.

Let us now pass to the second term of the relation to hypnotism. You have seen of what hypnotic phenomena consist. Let us see what is thought of it at Nancy. The following is M. Bernheim's definition.

"A certain psychic condition susceptible of being provoked, which brings suggestibility into activity or exalts it in different degrees; that is to say, the aptitude to be influenced by an idea accepted by the brain and to realize that idea." (Psychotherapy, page 76.)

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[1] See: Lur une affection caracterisie par de l'astasia, et de l'abasia, by Bloiq, Arch. de Neurol., Nos. 43 et 44.

"This new conception which I propose, of the hypnotic influence," says M. Bernheim, "this broader definition attributed to the word, allows in the same class of phenomena all the different practices which, acting upon the imagination, create, with or without sleep, the psychic condition of exalted suggestibility." (De la Suggestion, page 23.)

This definition is really extremely broad, but I do not see how it allows one to distinguish between a state of wakefulness, and the hypnotic state.

Suggestibility would be: "the aptitude to be influenced by an idea accepted by the brain, and to realize it." But according to that, every reasonable man is suggestionable. To whom has it not happened to be influenced by an idea expressed before him and to profit by it?

Hypnosis would be, quite simply, a condition in which this aptitude is increased. The condition of wakefulness can be distinguished, then, from the hypnotic state only by the degree of suggestibility. But what is the line of demarcation?

The increase of suggestibility is also for us one of the characteristics of hypnotism, but we have taken care to indicate a criterion of this exaltation.

If the definition of M. Bernheim be accepted, hypnotism may be properly considered a physiological property of man, but in this case the introduction of the word into the medical vocabulary has no propriety. It would suffice to say that every man is susceptible to follow the advice given him, and that invalids especially are often disposed, fortunately for them, to have faith in the encouraging words of the physician—which is true, but not new. To define hypnotism in a fashion so broad, or rather so vague, is almost a return to contesting the existence of this particular psychic condition.

M. Bernheim does consider the hypnotic sleep as differing from the natural sleep; according to him, the phenomena of suggestibility observed in hypnotism may be obtained in natural sleep. "When one succeeds in placing one's self *en rapport* with a sleeping person without waking him."

Very well, but to establish the identity of the two sleeps it would be necessary at least to demonstrate that in the two cases it is equally easy to place one's self *en rapport* with the sleeper. If, on the contrary, in natural sleep this result can be obtained but exceptionally, it seems to me more logical to say that the natural sleep is transformed into a hypnotic sleep.

If M. Bernheim, in sustaining that hypnotism is a physiological condition, wishes to say simply that the hypnotic properties exist perhaps, in germ, in a large number of people free from any neuropathic taint, I should not protest against that opinion, for in fact, pathological phenomena are often but the exaggeration of physiological phenomena. But is this a reason for sustaining that well-developed hypnotism is not a morbid condition?

As well say that pathology does not exist. Would any one pretend, for example, that onomatomani is not a disease, because any normal man may pursue a word stubbornly and almost impulsively, or a proper name which has escaped him, or may be possessed temporarily by a melody?

Thus on the one hand our opponents have ideas concerning hysteria which are inexact and narrow; on the other hand they enlarge arbitrarily the limits of hypnotism in giving to it a definition which lacks precision. It is then quite natural that they should have formed opinions upon the relations that exist between these two conditions, which are quite different from those which we have formulated.

Gentlemen, I forsee the response which will be made to this dissertation by the opponents of the ideas just advanced by me.

It matters little to us, after all, they will say, that our conception of hysteria is more or less correct, that our definitions are more or less exact, it is none the less true that we obtain marvelous cures by our practice, for we ameliorate and cure the most diverse diseases; our doctrines, contrary to yours, are fertile; we are masters in therapeutics, and that is our principal ambition.

Very well—these pretentions which have really been formulated do not rest, as I shall try to show you, upon very solid foundations.

Permit me first to tell you my opinion of the therapeutic rôle of hypnotism. It is not my intention to study this question in all its details and to pass in review all the special cases in which the hypnotic sleep may be utilized; I must content myself with giving you general indications in this regard.

I told you in the beginning of this lesson that, according to the doctrines at Salpêtrière, hypnotism can be of little service as a curative agent except in hysteria. One can affirm, in any case, in accordance with my ideas, that most of the troubles cured by this method arise from neurosis. Hypnotism can be used then in the treatment of hysterical manifestations. This should be recognized; but it must be acknowledged also that even in affections of this kind hypnotic practice does not always give brilliant results. There is opportunity to group hysterical patients from this point of view into several categories, and first two distinct classes must be established:

1st. In the first class belong the hysterical persons who are not susceptible to being hypnotized, and their number is great, whatever may be said about it, if one requires for admitting the reality of hypnotism the criterion which we have indicated. Failure is frequent in attempts at hypnotism, whatever the method used.

It may be answered in such cases, perhaps, it may be efficacious to act by means of suggestion in the state of wakefulness. Very well; and I am far from dissenting; but then hypnotism is no longer in use. The expression: suggestion in a state of wakefulness is of recent date, it is true, but it does not correspond to a new idea; it serves to designate a very old method which medicine has long known the use of. Was it not exclusively to act upon the imagination of patients, or, in other terms, to suggest to them that portions of distilled water and bread pills were prescribed before hypnotism was heard of? All physicians know perfectly that electrotherapy and hydrotherapy, outside of their special influence also exercise a suggestive action to which must be attributed most of the rapid or instantaneous cures obtained sometimes by the aid of these means. Is it not also for the purpose of assuming more authority over the patient, to take possession more completely of his mind, and to give him a new orientation; in a word, to be able to suggest to him better, that M. Charcot has always advised isolation in the treatment of hysteria? Suggestion in a waking state is an excellent method, but it should not be confounded with hypnotism.

Then hypnotism is not applicable to all cases of hysteria, because all hysterical patients are not susceptible of being plunged into the hypnotic sleep.

2d. The subjects forming the second are those who can be hypnotized. The group is composed of incongruous elements, if the therapeutic results which can be obtained be particularly considered; these, in fact, are either null or very remarkable, and between these two extremes there exists a whole series of intermediate cases. These differences are due either to the degree of intensity of the hypnotic state, to the kind of disease in question, to its duration, or to individual circumstances, the causes of which cannot be determined.

It is indispensable, then, from this point of view, to divide the class of hypnotizable hysterical patients into several varieties: (*a*) Sometimes hypnotism brings no amelioration. It is the case, for example, of a subject who has convulsive attacks; he is put to sleep, and it is observed that his attacks are less severe, less frequent, and will even disappear completely. The patient seems docile, confiding in the word of the physician, and persuaded that everything will happen as he has been told, and nevertheless the crises are immediately renewed as before. Or it is the case of an individual who feels violent pains, who is effected either with an hysterical arthralgia or with a calaneous hyperæsthesia; the effort is made to convince him during the hypnotic sleep that the painful sensation is less intense, and to this end suggestion is employed under the most varied forms. This is labor lost; the patient rebels at therapeutic suggestion.

I do not wish to assert that the attacks and the painful phenomena which depend upon hysteria are always refractory to hypnotic suggestion; but I have chosen these two examples because, if I may judge from my experience, non-success is relatively more frequent in troubles of this kind.

(*b*) In certain cases an amelioration may be obtained, but it is very slight. Here is, in a few words, an observation of the kind relating to a patient whom I attended under the direction of my master, M. Charcot.

A young girl, twenty-two years of age; for six years a contracture of the left arm and both lower limbs; cutaneous anæsthesia generalized over the entire extent of the integument; permanent pain in the left ovarian region, but experiencing very marked exacerbations when the abnormal position of the lower limbs was changed; double and concentric contraction of the visual field; loss of taste and smell; convulsive crisis announced by a sensation of constriction in the throat and characterized by contortions of the limbs and violent movements.

It has been possible in this case to obtain at length by hypnotic suggestion the disappearance of the contractures of the arm, but the contracture of the lower extremities was not modified, and all attempts made in this direction provoked, as in a waking condition, an aggravation of the ovarian pains. I will add that the patient is to-day completely cured; but hypnotism can, in this case, claim but little success.

(*c*) It happens at times that hypnotic suggestion immediately produces a great amelioration and evidences a complete disappearance of the trouble in question. But the result is brilliant only in appearance, for it is not lasting; either the trouble comes on when the patient is wakened or the cure is only provisional. I present before you a young girl in whom exist the symptoms of hysteria, and who is hypnotizable; she is a great hypnotic. She was attacked a few months since by a contracture of the upper left arm, which may be made to disappear by suggestion with the greatest ease, but which will reappear in the morning when she wakens. Up to the present time she has not been definitely cured, and she has to be hypnotized every day.

Relapses of this kind seem to me particularly frequent in cases of hysterical muteness. M. Charcot has recently had occasion to observe a patient suffering from this affection who is daily hypnotized five or six times by her physician, for she retains her speech only about two hours after wakening.

(*d*) Let us now pass to another group of facts. Here the amelioration is obtained but slowly, and it becomes clearly appreciable only after several successive sittings, but it has the advantage of being permanent, and little by little a definite cure is effected.

Here is a patient named S., whom I have presented before you, in whom the hypnotic phenomena do not exist in perfection, but are at the same time sufficiently characteristic. I will briefly summarize her pathological history. She is twenty-one years of age. When first seen by me there existed a paralysis of the lower limbs and of the left arm, spontaneous movement was entirely lacking, but the arm was agitated by involuntary rhythmic motions, which stopped only during sleep. There was in addition to this a hyperæsthesia of the left side so marked, that a simple touch, the most superficial excitation, such as might be produced by a light breath, provoked severe pains. The patient had been in this condition for five years, and the different treatments to which she had been subjected brought no help. I would add that in the face there was no motor disturbance, that general sensibility remained unchanged, but that the visual field was contracted on the left.

Such was the situation five months ago. From the first attempt the patient could be plunged into hypnotic sleep.

I tried immediately to obtain a modification by suggestion, but I must say that at least in appearance there was no result; at the same time the patient said she felt somewhat easier during the day. I repeated the same operation upon several successive days and was able to see at the end of a week an amelioration, slight but clear, which has since become still more evident. I have thus been able, little by little, to obtain a decided result, and for two months the patient has been able to rise and can now walk a distance of 200 metres, slowly and limping, it is true, without resting; the patient can also open the hand, bend the arm, and even raise it; at the same time this last movement is only possible when she is hypnotized, the hyperæsthesia has much diminished in the lower limb, but is still very pronounced in the arm.

Five months have been required to accomplish this; the cure is not yet achieved, but the amelioration has been great, the progress has been maintained, and there is every reason to suppose that a complete cure may be effected by perseverance; this is the more hopeful, as the patient feels happy over the present unhoped-for results, and is full of confidence.

Here is another observation analogous to the preceding from the point of view of therapeutic results, but still more remarkable, for it is concerning an affection which has lasted eleven years without intermission, and it has been possible to affect an absolute cure, which has now lasted more than two years.

A child named F., an inmate of the Rothschild Orphan Asylum, experienced, at the age of eleven years, as the result of a fall on the right knee, very severe pains in the part affected. A hydarthorsis developed, which made it necessary for the child to remain quiet. The effusion diminished little by little, and finally disappeared; but the pains persisted and extended throughout the entire limb; they predominated at the knee and hip.

The disease, of which I cannot here give the detailed history, presented an intensity and tension which obliged the patient to keep her bed eleven consecutive years;

she has been able, however, at several different times, after having had the limb made immovable in a cast, to walk with the aid of crutches. Some years ago a surgeon operated upon her to lengthen the sciatic nerve. In spite of these different methods of treatment the patient, at the age of twenty-two years, was in a worse condition than ever; the limb was completely contractured, and was immovable in internal rotation, and presented a marked apparent shortening, the muscles were somewhat atrophied; the pains in the knee and hip were very severe, the stiffness extended to the muscles of the trunk, and she could not even assume a sitting posture. Several surgeons who were consulted at this time thought that irreparable lesions existed in the joints, and advised amputation of the limb.

Dr. Perier, surgeon of the Lariboisiere Hospital, was also consulted. He gave his opinion that there was a nervous trouble, and did me the honor to ask my advice concerning it. Hysterical symptoms were almost totally wanting. At the same time there was less sensitiveness to the touch in the left limb than in the right. This young girl was subject to convulsive crises with violent movements in the arc of a circle; chloroforming produced a complete freedom from contracture, and showed that the articulations were absolutely free.

I gave the diagnosis of contracture and hysterical coxalgia. M. Charcot, at my request, consented to receive her at Salpêtrière. I tried at several different times to hypnotize her, but without success. I then gave her treatment by transference. From the first treatment the patient experienced a slight improvement, which was, it is true, inappreciable to me. After several treatments the results became apparent to me, for I perceived that the toes moved. It is impossible for me to indicate the modifications produced on the condition of the patient from day to day. It will suffice for me to say that, as in the previous case, the amelioration resulting from each treatment was but slight, but that this improvement having once taken place was maintained definitely, and that after several months an absolute cure was effected.

I will not try to determine here the action of the method which I employed, for that would require long recital and would lead me away from my present subject. I must simply remark that the patient had not been hypnotized. I should not have spoken to you of this observation had I not desired to acquaint you with a particularly interesting case, and to show you by the way that, contrary to the insinuations of our opponents, the therapeutic results obtained at la Salpêtrière are not less than those which they have valued more highly (page 28).

(*c*) Finally, under certain circumstances by the aid of hypnotism, very rapid and even instantaneous cures may be effected. Cases of this kind are not very common, but their reality cannot be questioned. The following is an example:

Madame B., subject for a long time to cephalalgies and insomnia, was operated upon, at the age of forty-six years, for a tumor in the left breast. The wound cicatrized very rapidly, and from a surgical point of view the result was perfect. But shortly after the operation the patient experienced darting pains about the cicatrix and as high as the shoulder; then pains increased in intensity when the corresponding arm was moved. Several physicians whom she consulted thought that the pains were due to a neuritis, following the surgical traumatism, and advised her to keep her arm immovable; the patient avoided moving the arm at first, but soon it became heavy and swollen, and finally an almost complete brachial monoplegia developed; at the same time the insomnia and headache became more and more aggravated. After numerous unfruitful therapeutic attempts, made during four consecutive years, Madame B. came to consult my friend Dr. Sireday, physician of the hospitals, who believed that the nervous trouble in question depended upon hysteria, that there might be reason to try to hypnotize the patient, and did me the honor to send her to me.

At the time of my first visit, Madame B. was incapable of using her arm. The movements which she was able to make were few; and if an attempt was made to move the shoulder, however little, she experienced severe suffering. The muscles of the shoulder were contractured; those of the arm and forearm were relaxed. Farther, I found a marked diminution in the general and special sensibility of the whole left side of the body, and a concentric contraction of the visual field of the same side. The patient told me that she suffered continually with her head, but that two or three times a week she suffered atrocious pains at the level of the vertex for twenty-four hours, and that she never slept more than one hour during the night.

I made the diagnosis hysteria, like my colleague, Dr. Sireday, and tried to hypnotize the patient. I succeeded at the first trial, and immediately caused her to move her arm more freely than she had done for four years. The rest of the day I caused her to execute still more extended movements, and after five treatments her arm returned to the normal condition, all movements are possible, and the pains have disappeared. The cephalalgia decreased notably, and sleep was re-established; at the same time I should state that these two phenomena have opposed a greater resistance to suggestion than that presented by monoplegia.

Here is another case in which the result was still more brilliant:

A child of thirteen years was attacked by an impotence of the lower limbs, resulting from an infectious disease. He could not stand; when placed in an upright position with feet upon the floor and all support withdrawn, he immediately sank to the floor; when lying down he can move the different parts of his lower extremites, as when in a normal condition, and the muscles are thus shown to retain all their vigor. No other nervous trouble is present. The affection has lasted three months.

In spite of the absence of hysterical symptoms, M. Charcot diagnosed it as hyterical astasia, for reasons which are too long to enumerate here.

At a single sitting the child recovered the use of his legs; he became able to stand erect and to walk. The cure is definitely maintained.

(*To be continued.*)

CONTRIBUTION TO THE STUDY OF EXOPHTHALMUS.

Löwig (Inaug.-Diss., Berlin, 1890). A healthy woman, thirty-six years of age, struck herself against an iron bar in the region of the right lachrymal bone. This was followed by severe pain, loss of vision, and immovable eyeball. Within a few weeks there was improvement in the paralysis, save the sphincter pupillæ, but discoloration and atrophy of the optic nerve, arteries narrow, veins large and tortuous. The cause of the blindness is to be looked for in the optic nerve, according to Silex, and the point of injury in the optic foramen, where we must assume the existence of a fracture with secondary laceration, but perhaps only a crushing of the nerve.

The former is more probable in the above case on account of the orbital hemorrhage. Hemorrhage into the sheath of the nerve is excluded, there being no ophthalmoscopic evidence of the same.

A driver, forty-three years of age, was kicked by a horse over the upper border of the left orbit. Unconsciousness and complete blindness. At the inner angle of the eyelid there was a scar, which was sensitive to pressure, extending to the border of the orbit. The left eyeball was six mm. deeper in the orbit than the right. The inward movements of the left eyeball were free; upward and downward moderate, and limitation of outward movement. Pupils dilated and without reaction. Refracting media clear. Optic nerve atrophic. The exophthalamus resulted from the shrinking of the retrobulbar adipose tissue. The sudden blindness following an injury may be explained in the same manner as in the first case. (Centralb. f. klin. Med., No. 51, 1891.)

W. M. L.

SYRINGO-MYELIA, OPERATION—EXPLORATION OF CORD—WITHDRAWAL OF FLUID—EXHIBITION OF PATIENT.[1]

BY ROBERT ABBE, M.D., AND WILLIAM B. COLEY, M.D.

IT is not my purpose to write an elaborate paper upon the subject of syringo-myelia, but the cases thus far reported, in this country at least, are so few in number that I feel sure that any addition to our clinical knowledge of this most interesting lesion will be gladly received, and therefore without further introduction or apology I shall proceed to narrate the history of the case, which Dr. Abbe and myself have the honor of presenting to you this evening.

The history of the case is as follows:

J. D., twenty-six years of age, male, telegrapher, born in the United States, consulted me in November, 1891. He was a young man of more than average intelligence, and gave a very clear account of his previous history. Free from any hereditary taint, he himself had always been well until the age of sixteen, when he had an attack of cerebro-spinal meningitis. He recovered from this, and was apparently as well as ever for four years. In the spring of 1886 he began to have numbness in the left foot, quickly followed by a slight loss of power. Three months later the same symptoms appeared in the right foot.

The weakness gradually increased, but did not seriously interfere with his walking, until December, 1887.

On December 16, 1887, while going down-stairs, he suddenly lost control of his legs, and fell. On attempting to get up he could not walk. His right leg was very rigid, and voluntary movements of legs were almost lost.

He soon began to improve, and three months later was able to walk with a cane.

From the spring of 1888 to 1890 he noticed little change. He was able to go about alone during this period, but was obliged to use a cane.

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[1] Read before the Section of Neurology, Academy of Medicine, April 15, 1892.

In the fall of 1889 he applied for treatment at the Vanderbilt Clinic, and was treated in the neurological department until the latter part of 1890. The examinations which were then made from time to time, and which I owe to the courtesy of Dr. Vought, are exceedingly interesting as showing the progress of the disease, and as they were made by specialists in nervous diseases, they add materially to the value of the history.

The first examinations showed the legs flexed involuntarily upon the thighs, and the thighs upon the abdomen. There was considerable spastic rigidity in the muscles of the legs, with tendon-reflexes exaggerated.

The patient was examined under ether by Drs. Parker and Gallaudet, with the result that the muscles did not relax and the reflexes remained exaggerated.

In January, 1890, there was motor disturbance of the right leg, with sensory disturbance of the left anterior thigh and lumbar regions.

In August, 1890, there was little change in the nature of the symptoms, but a slight increase in their severity. The back of the left leg and the entire front showed considerable uneven analgesia and anæsthesia.

The treatment (electricity) apparently not benefiting him, he became somewhat discouraged and gave it up.

I omitted to state that in 1887, a year after the beginning of the symptoms, he had a supposed "primary lesion," and underwent specific treatment for two years, taking large amounts of iodide of potassium and mercury. The fact that the lesion appeared within a week after infection and that no secondary symptoms of any kind followed make it extremely doubtful that he had syphilis.

During the year 1891 his symptoms became progressively and much more rapidly worse, and he was obliged to use two canes most of the time.

He had some pain in the legs, frequent involuntary contractions of the muscles of the legs and thighs, more marked in the right; increased spastic rigidity, which caused the feet to assume a constant equinus position interfering seriously with walking. He complained of numbness and loss of sensation in the left leg, with loss of power in both legs.

The right leg was much more rigid than the left, and irritation of the muscles caused violent contractions. To avoid repetition, I will say nothing further as to the conditions present, when seen by me, November, 1891, but will give Dr. C. L. Dana's careful examination, which was made soon after the patient came under my care. He was admitted to the Post-Graduate Hospital in November, 1891, and remained three weeks in order to permit a thorough examination.

EXAMINATION OF DR. C. L. DANA.

Vaso-motor Irritability.—Viscera: Has some loss of control over the bladder; is constipated and cannot feel the passage of fæces always. Sexual function is not abolished.

Motion.—Spastic paraplegia not complete, and most paralysis in the right leg. Motion is possible, and patient walks with difficulty. Legs rigid and reflexes exaggerated, both deep and skin; ankle clonus. Right leg more spastic and irritable. No atrophy or paralysis of a muscular group, but some general atrophy.

Sensation.—Right leg: Band of triple anæsthesia from eighth dorsal to groin and buttock; pathic and thermic anæsthesia most marked. Very slight anæsthesia elsewhere.

Left leg: Tactile anæsthesia most marked just in lumbar region behind and in corresponding part in front. Pathic-anæsthesia general, and extends to twelfth dorsal vertebra. Thermic anæsthesia general, but extends higher than pathic or tactile. Muscle sense fairly good; better in right. Touch on left leg felt on right.

This imperfect type of Brown-Sequard paralysis was thought by Dr. Dana most probably to depend upon an incomplete transverse myelitis, extending as high as eighth dorsal vertebra. No absolute diagnosis was made. The patient had come to me with an earnest desire to have an operation performed if there was any possibility of affording him relief. The tumor of the cord would be the only thing that could offer him any hope of benefit from operative interference, and he was told that the chances of finding a tumor were exceedingly small.

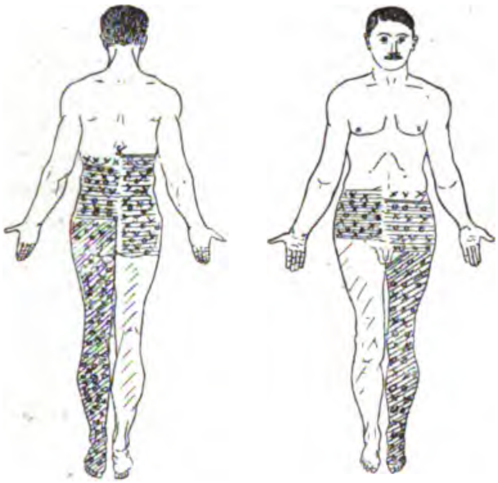
He was seen several times both by Dr. Abbe and Dr. Dana; and after Dr. Dana's examination had been explained to him, he still expressed a desire for an exploratory operation.

This was performed in the month of December, 1891, at the Post-Graduate Hospital. The details of the operation as well as the nature of the pathological condition found, will be given by Dr. Abbe.

The after-history contained little worthy of note. The wound was dressed on the second day. The heavy dressing was found soaked with bloody discharge, but there was no decomposition. The tube was removed.

He had little control over the bladder or rectum, and the twitchings of the legs were increased.

On the sixth day the temperature rose to 103½°, and the spasms of the legs, clonic in character, became frequent and severe, causing great discomfort to the patient. The wound was somewhat reddened about the edges, and from the site of the drainage tube there was a slight discharge of a sero-sanguinolent nature. There was no suppuration at any time. The patient had a slight bronchitis before the operation, and this became quite severe after the operation, which might account for the rise of temperature.



The horizontal lines represent tactile anæsthesia. The oblique lines represent the same less marked. The circular marks represent pathic anæsthesia ; the crosses, thermic anæsthesia.

At the end of the second week he began to improve, and the spasms became less frequent. The rigidity of the muscles of the legs also diminished. He gradually began to regain control of the bladder and rectum. The improvement has gone on steadily up to the present time. I examined him carefully yesterday and found that the areas of anæsthesia, tactile, thermal and pathic were practically the same as at the time of Dr. Dana's examination before the operation.

His muscular power is also about the same, being able to walk with the help of two canes.

The spastic condition of the two legs is still relatively and absolutely the same. The right leg is much more rigid than the left, but moderate force, if applied constantly, soon overcomes the spasticity, and the leg can be completely flexed or extended. The same movements are possible, voluntarily, in the left leg, but they require considerable effort on the part of the patient. The functions of the bladder and rectum remain practically the same as before the operation.

Measurements of both legs are the same, and, aside from slight general atrophy, trophic symptoms are absent.

The case reported shows the difficulties lying in the way of a correct diagnosis of syringo-myelia. These difficulties were for a long time considered insuperable, and only within the last decade have the cases been carefully studied, and an attempt made to classify in a scientific manner, the obscure and often widely varying symptoms; Strümpell[2] (in 1885) said, "the diagnosis can never be made with certainty, but only hypothetically by the exclusion of other possibilities."

The more recent investigations on this subject, particularly those of Schultz[3] and Baümler,[4] have shown that there is a certain grouping of symptoms characteristic of the disease, and the well-known and most valuable paper of Dr. M. Allen Starr,[5] has done much to increase our knowledge of this hitherto little understood disease.

The pathology as well as the clinical symptoms of the disease have been so well described by Dr. Starr, and again very recently by Dr. Vought,[6] it is unnecessary for me to more than refer to them here. The symptoms may be briefly classified as follows:

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[2] Text-book of Medicine, second edition.

[3] Zeitschrift f. klin. Med., xiii., 525.

[4] Deutsch. Archiv f. klin. Med., xl., 443.

[5] Amer. Jour. of Amer. Sci., 1888, iii., 6.

[6] N. Y. Med. Jour., Nov. 21, 1891.

1. Trophic.
2. Sensory.
3. Vaso-motor.

All of these symptoms may vary within the widest limits, from no symptoms at all, to such a wide range of symptoms as to completely obscure the diagnosis.

With all the symptoms present, the diagnosis is easy.

The anæsthesia and analgesia furnish an accurate method of locating the extent of the lesion, since they correspond with the location. "Lesions in the dorsal region produce bands of anæsthesia at their level around the trunk. Lesions in the lumbar enlargement cause anæsthesia of the front of the thigh and leg." Starr.

In the present case the motor symptoms show the anterior cornua are affected. This occurs in about one-half of the reported cases (24 of 56).

The sensory symptoms show the posterior cornua are likewise invaded (32 of 56).

The vaso-motor and trophic symptoms in the present case, contrary to the general rule, are less prominent than the other symptoms. This shows that the destruction of the central gray matter is not as yet great.

The involvement of the lateral columns must be extensive, as the spastic paralysis has long been a prominent feature, so much so, that the diagnosis of spastic paraplegia might easily have been made, were it not for the presence of the sensory symptoms.

The presence of a fusiform enlargement between the eighth and eleventh dorsal vertebræ, shown by the operation to be a fluid accumulation in or near the central canal of the cord, joined to the clinical history already presented, proves the case to be one of syringo-myelia—probably depending upon the fluidifying of a gliomatous tumor located in the region referred to.

While the operation has not cured the patient, the perfect recovery from the operation and the increased knowledge which the operation has given, will, I am sure, not be without influence in placing the spinal cord within the legitimate field of operative surgery.—W. B. COLEY.

REPORT BY DR. ABBE.

The patient, the medical aspect of whose case has been presented by Dr. Coley, was seen by me in consultation a few days before operation, and presented symptoms of such an unusual character that I concluded that there was either a transverse myelitis, or possibly a tumor pressure. In either case I felt justified in advising an exploratory operation, inasmuch as my experience in numerous cases had led me to regard operations upon the spinal cord as not involving much danger *per se*.

Several methods of reaching the cord have been described by different surgeons, but they have faults which, in my experience, are done away with by a simpler method, which I have devised and carried out in several cases. All operators advise cutting away the muscles from both sides of the spinal processes, and then removing the spines with the interspinous ligaments. This substantial portion of the spine is entirely saved, without hindrance to the operator, by my method, which is described in the *New York Medical Record*, July 26, 1890, and is as follows:

An incision at least six inches long is made in the median line, and carried through the muscles close to the spines, down to the laminæ on one side only. The muscles are now scraped from the surface of the laminæ by a rather sharp-curved periostium elevator, and drawn outward. A sharp chisel, or moderate sized cutting pliers, is now used upon the bases of the spinous processes to be removed, and a block of three or four spines, with the muscles still attached to one side, is thus liberated so that it can be readily drawn to the opposite side, periostium elevator being applied to scrape the muscles from the remaining side of the laminæ; the interspinous ligament is not cut. To uncover three sets of laminæ, it is best to cut loose four or five spinous processes.

Thus the entire breadth of both laminæ is quickly exposed, a pair of good retractors holding the muscle in one direction, and the muscle plus the liberated spines in the other. A pair of curved or straight gothic-pointed small rougeurs can now be made to quickly gnaw away the laminæ, so as to lay bare as much of the spinal cord as is needed. By this method the quickest possible approach to the spinal cord is made, with the least sacrifice of sound tissue and the least hemorrhage—two very important points.

Following this method in the case under consideration, I removed the laminæ of the ninth, tenth, and eleventh dorsal vertebræ. Usually the dura of the cord is rounded out when exposed, but does not fill the vertebral canal. In this case, however, there was a large fusiform dilatation of the cord, filling completely the vertebral canal. I therefore split up the dura for two inches and a half, and was greatly suprised to find no spinal fluid escape, as there is usually a flow of one or two ounces.

The cord presented a white surface. It was distended to twice its normal size and thinned laterally, the posterior columns being white and fairly marked. The substance of the cord was much wasted, and spread out on what seemed to be, on palpation, a lemon-shaped central cyst. The veins of the surface were very little more distended than normal.

The meninges were delicately adherent to the inside of the dura, not enough, however, to prevent a probe passing in any direction with ease.

A hypodermic aspirating needle was used to prick the cyst through the posterior columns. This caused some twitchings of the spinal muscles.

A colorless watery fluid was withdrawn to the extent of a drachm and a half, which evacuated the cyst and allowed the swollen cord to collapse.

There being no reason for further interference, I sutured the dural incision, which was two and a half inches long, with fine catgut continuous suture. This method seals the dura closely, and in the numerous cases in which I have resorted to it, has never been followed by leakage of the spinal fluid.

The displaced block of spinous processes was now restored to its position in the median line, and fixed by three buried catgut sutures to the opposing spinal muscles.

A rubber drainage-tube of small size was inserted to the level of the dura at the lower angle of the wound, and the superficial parts closed by continuous suture.

No plaster jacket or other support is ever needed in these cases, unless there has been a fracture of the bodies of the vertebra.

Uninterupted convalescence occurred, and the wound-scar to-night shows the substantial condition left by not gnawing away the spinous processes, which usually requires filling in by granulation.*—ROBERT ABBE.

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* In May, 1892, the patient was taken suddenly worse: spastic symptoms increased in severity; cystitis developed—very painful, and resisting all treatment. He failed rapidly, and died June 6, 1892. Every effort was made to secure an autopsy, but without success.

SYPHILIS IN ITS RELATION TO DIABETES.[1]

By EDWARD D. FISHER, M.D.,

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DIABETES due directly to a syphilitic lesion and amenable to strictly specific treatment is not common and yet is of interest, as in most treatises on diabetes, syphilis is either not referred to as an etiological factor, or if so, but passingly alluded to.

Three cases having come to my attention recently, I have thought the subject not unworthy of discussion before this Section, although the observations are only clinical and not sustained by autopsy. The response to the treatment followed out, however, would seem to positively affirm the diagnosis.

Schnée, a physician in Carlsbad, in his work on Diabetes, considers hereditary syphilis as a common cause of diabetes in the young and in adults. Many of his latter cases, however, would seem to me subjects of acquired syphilis in the tertiary stage, and it is in the third stage only that diabetes occurs. The pathology of the disease is not discussed by the writer.

It would certainly be of great interest if by wider study we should find syphilis playing another of its protean parts in the production of the disease.

Endarteritis is one of the usual results in the tertiary stage of syphilis, and the arteries of the brain and cord are frequently involved, especially the smaller vessels, although by no means exclusively.

Possibly the cause of diabetes generally, can be ascribed to some disease of the nervous system; and it seems to be a fact that when specific disease affects the nervous system, other internal organs escape.

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[1] Read at the Section of Neurology, Academy of Medicine, April 15, 1892.

Lesions in various parts of the cerebro-spial systemn may cause diabetes; the optic thalami, cerebral peduncles, pons, cerebellum and the peripheral nerves, as the sciatic. It is probably through reflex inhibition of the vaso-motor centre in the medulla, leading to hyperæmia of the liver.

Fox, in his work on the "Influence of the Sympathetic in Disease," quotes a case of solitary tubercle, the size of a bean, situated just below the left olivary body, in the medulla oblongata and reaching to the exit of the first cervical nerve. In this case he says the diabetes must depend on the implication of the gray matter in the cord in the cervical region, as saccharine urine is not found if the white matter only is involved.

Lesions of the medulla, he further says, do not act on glycogen by means of the vagi. It is a reflex action transmitted by the spinal cord, probably through the gray matter and the sympathetic nerves. From the cord the passage is by way of the great sympathetic at the level of the origin of the inferior cervical ganglion and upper thoracic ganglion and the splanchnic nerves, and thus through the solar plexus to the liver.

I do not intend to quote the oft-repeated views of Bernard and Pavey as to the sugar-producing function of the liver, except so far as to say that both agree that the vaso-motor centre in the floor of the fourth ventricle controlling the circulation is affected in the disease, resulting in hyperæmia of the organ.

The remarks so far made point only to the fact that various lesions of the nervous system can cause diabetes and lead us, therefore, to the consideration of disease of specific origin. And here I would state that it is probably not a frequent cause.

In fact, Rumpf, in his work on Syphilis of the Nervous System, refers to only three or four cases, and those were not true diabetes, but rather polyuria.

Fournier states that while it might be a cause, no case had come under his observation.

My personal experience would agree with that writer.

Many cases of syphilis of the nervous system come under my observation, and certainly this disease, with its well-marked class of symptoms, would have been observed had it existed.

Of late, especially, I have made careful investigation in several instances.

For the history of the first case I am indebted to Dr. Geo. B. Fowler.

A. B., male, aged forty. History of primary syphilis in 1875. Was under homœopathic treatment. For the last five years has shown mental torpor. During this period, on two occasions, had an attack of partial general paralysis and stupor, from which he recovered.

October, 1891, had a third seizure of this nature, at which time Dr. F. first saw him. Examination showed left internal strabismus imperfect articulation and great uncertainty in standing and walking.

The countenance was stupid, the patient very lethargic and emotional at times, easily exited to laughing or crying. Polyuria marked, passing two hundred ounces of urine in twenty-four hours, which was colorless, with specific gravity 1095.

Under specific and tonic treatment these symptoms greatly improved. The urine was reduced to seventy ounces, with decided yellow color, and sp. gr. 1012.

The following treatment was ordered: seven hundred grains of the iodide were given in twenty-four hours; three inunctions of mercurial ointment, calomel, vapor baths, and tonics.

CASE II.—Report received from Dr. Wm. Shannon. Male, aged forty, commercial traveler; history of syphilis. Two years ago began to lose flesh, and had cephalalgia, and was treated at first for indigestion. Later came to New York; sugar was found in the urine, and the specific disease recognized. Special diet and tonics failed to reduce the amount of sugar, which, however, responded to specific treatment.

CASE III.—The items furnished me by Dr. H. P. Loomis. Patient a female, aged forty-six. Specific history: Tertiary symptoms; urine showed sugar of gr. 1034. Diet and Blanchard's pills were used in conjunction with the iodides, but only under the latter was the quantity of sugar decreased to a marked degree.

In four cases reported by Feinberg in the *Berlin klin. Wochenschrift*, Nos. 6 and 7, the first was one of diffuse syphilitic cerebro-spinal meningitis, and responded well to treatment.

The second case was one of endarteritis of the vessels of the medulla, in the neighborhood of the vagus. The case was improved under specific treatment.

The third case was one of bulbar disease, with good results under specific treatment.

The fourth case was one of a specific infiltration at the base of the brain in the region of the optic chiasm.

None of these cases came to autopsy.

In conclusion, then, we would state that we find in syphilis of the nervous system not infrequently diabetes associated, and would ascribe the seat of the disease as most often in the medulla or its neighborhood, and that probably in the three cases of our own a specific endarteritis was present.

Ord, in an article on Diabetes in the *British Medical Journal*, 1889, says that he has had many cases of diabetes in tertiary syphilis.

Hyperæmia of the liver seems to be present in most cases of glycosuria, except when excessive ingestion of glucose substances can be assigned as a cause, and therefore it is possible that a lesion involving any part of the glycosuric tract can cause the disease. My object has been to call attention to the condition and not to go further than to suggest its explanation.

Autopsies indeed reveal in many cases disease of the heart, liver, kidneys, and spleen, but these are by no means constant, and it is from this uncertainty that we are perhaps driven to look for some influence from the side of the nervous system as the causative agent.

TREATMENT OF CHOREA BY EXALGINE.[1]

By CHARLES L. DANA, M D.

Contributions from the Neurological Clinic, N. Y. Post-Graduate Medical School.

IN the last few years there have been treated at my clinic over three hundred cases of chorea. The methods employed have been the use of arsenic or zinc, iron and quinine, cold baths, chloral at night if needed, galvanisim in chronic cases, rest and quiet as much as possible. Such treatment usually gives perfectly satisfactory results in that the patients as a rule get well in from ten to twelve weeks. All cases do not, however, respond to treatment, and in many instances the actual benefit from such drugs as are considered specific, viz., arsenic, zinc, blue cohosh, etc., fail entirely, or are not well borne. Hence it has seemed to me proper always to keep on the alert for remedies which might be more active than those now in our possession. At various times I have tried antipyrine, antifebrine sulphonal, phenacetine, actea racemosa, and its active princple, hyoscine, physostigma, the salicylates and bromides.

Not one of these alleged useful drugs has produced really satisfactory results, and I have abandoned their use, except in a few cases.

Thus, despite its laudation at the hands of some, I have rarely seen chorea favorably modified by antipyrine, or antifebrine; nor does hyoscine appear to be of any real service.

In January, 1891, I began to give exalgine in some of the cases that came to the clinic, and also in a few hospital and private cases.

It seemed to act serviceably; and I have now employed it in sixteen cases, using it in larger doses than at first and in most instances employing no other remedy whatever.

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[1] Read at a meeting of the New York County Medical Society, May 23, 1892.

I have seen such results from exalgine properly given as to convince me that it unquestionably has a specific effect on the ordinary or Sydenham's chorea.

As an example: A girl, aged ten, came to my clinic at the Post-Graduate School, March 7th, showing all the symptoms of chorea in a typical and aggravated form. She was unable to dress or feed herself; there was no rheumatic history or cardiac lesion.

She was placed on three grains of exalgine *ter in die*. She came back in two days somewhat improved. The exalgine was increased to three grains five times a day. She returned in four days, and the choreic movements had almost entirely ceased. The change was marvelous, but she was extremely anæmic; so much so that I stopped the exalgine and gave her iron. In two days she came back looking better, but the movements had returned somewhat. She was placed on exalgine and iron, and in a week or more was completely cured.

The total duration of the disease was seventeen days, and the duration after treatment began, less than ten days.

In one other case cure was nearly as prompt; in two others the disease under treatment lasted only two weeks; in another case four weeks. The average duration of the disease under treatment was five weeks. A good many cases before they were placed under the exalgine-iron treatment had been under arsenic, without apparent effect.

The number of cases in which I have applied this method is not large; but the ordinary course of chorea under arsenic is so well known and the favorable divergence from this course under exalgine and iron was so marked, that I am, I think, justified in drawing positive conclusions as to the efficacy of the drug.

The method of administering the remedies is to prescribe exalgine in two-grain capusles. Of these I give one three times a day the first day; one 4 *i. d.* the second day;

one 5 *i. d.* the third day; finally three grains 5 *i. d.* if needed. At the same time I give:

℞ Ferri et quin. citrat., - - gr. xlviii.
Aquæ, - - - - - ℥ iii.
M. Sig.—ʒ i *t. i. d.* Always after meals.

Exalgine is a drug that *should be given carefully.* Its use may produce muscular prostration. I have seen it cause acute anæmia and cyanosis; but not other symptoms, such as salivation, articular pains, formication, mental enfeeblement or excitement, mentioned by some writers. I know of no fatal results from its use.

The indications for its use are the common subacute chorea of Sydenham, not chronic chorea, habit chorea, or the convulsive tic, or chorea major.

Sometime ago I used it extensively for the relief of pain, but gave it up because of its uncertainty and tendency to cause cyanosis.

Exalgine was introduced into the profession by Dujardin-Beaumetz and Bardet (Compt. Rend., 108, p. 571; Ther. Gaz., March, 1889). It is chemically methylanilide. It is soluble in hot water and in alcohol and water. It is a motor depressant, antipyretic and analgesic.

Exalgine has been favorably recommended in chorea by Dr. Moncorvo (Bulletin Therapeut., Nov. 30, 1890).

Dr. H. Lowenthal has also given favorably reports of its use in thirty-five cases (Semaine Médicale).

EPILEPSY AND INFANTILE CONVULSIONS.

(Boston Med. and Surg. Journal, November 5, 1891.) Walton and Carter, having made a study of the connection between epilepsy and infantile convulsions, came to the conclusions (1) that epilepsy may begin in infancy and become continuous; and (2) where infantile convulsions have ceased for a sufficient time to remove the case from the class mentioned under conclusion (1) the child is no more likely to become an epileptic than any other individual. A. F.

HYSTERIA IN CHILDREN.

By JAMES WRIGHT PUTNAM, M.D.,

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AMERICAN writers on hysteria quote with regularity the tables of Clopatt and Briquet showing age to be an etiological factor. From these tables we learn that about one-fifth of the cases of hysteria occur before puberty. Yet our writers report very few cases. Some of our text-books, as Meigs and Pepper, do not even mention it. In the last few years I have been impressed with the number of cases of hysteria occurring in its various forms in the first decade of life. A study of my cases shows that infantile hysteria is by no means a disease of classes. It occurs among the children of the rich and of the poor, the educated, and the ignorant; in the towns and in the country districts. This is to be expected when we remember the prominent rôle which heredity plays in this condition, and that alcoholism, epilepsy, hysteria, insanity, and chronic invalidism in parents must be considered as part of that neuropathic heritage, and that Charcot has lately taught that the offspring of rheumatic parents were frequently hysteric. The home life of children has a great influence upon their nerve stability. Children who are petted, whose every whim is gratified, and who learn that their parents cannot resist their tears, lose the benefit of discipline which develops and strengthens character, grow up selfish and self-willed, and when the sorrows and trials come which even indulgent parents cannot remove, they may come to a condition of hysteria. Children who live in homes where they are constantly abused and distrusted, live, many of them, in a chronic state of dread and apprehension which is so closely allied to hysteria that with an exciting cause it is readily developed. Another and potent cause is the improper diet of children. Among the poor it is customary for the parents to give their little ones tea once or twice a day from the time they leave the breast. So common is this that in my dispensary practice it is a matter of routine with me to ask the mothers of children suffering with chorea disorders of sleep, habit spasms and hysterical symptoms, "when did you begin giving the child tea or coffee, and how much does it take?" The majority answer that they commenced to give them tea and coffee when they were two years old. Others have had it in their first year. They take it two or three times a day. It has seemed to me, that at the time when the intellectual centres are naturally highly stimulated by the new impressions they are daily receiving through each special sense, when they are acquiring the art of languge, when memory is being trained to associate names with persons and things, that it is impossible at this period of cerebral growth and development for children to take these cerebral stimulants without their being potent factors in the development of nervous functional diseases. *Per contra* it is said that many are not harmed by this dietry. I do not think this is proven, for we know that a large part of the poorer population is more or less dependent upon stimulants and it is impossible to tell what influence their early tea drinking may have had in those cases in which a tendency to neuropathic disease exists, the early giving of these drinks increases the probability of its development. Other causes of hysteria in children may be fright or other profound emotion. Often it comes as a sequel to severe and exhausting diseases, and after trauma.

A classification of the various forms is a difficult task. For convenience we will arrange them in the psychic, the convulsive, the paralytic, and the anæsthetic forms. The psychic includes the large number of emotional, erratic children, who are easily provoked to violent passion, are frequently cruel to animals and weaker children and take pleasure in witnessing their suffering. They have disordered sleep, are sometimes somnambulists, and are often the victims of night terrors. The convulsive form is not nearly so frequent with us as with the French. And when a child in this country is afflicted with a hysterical convulsion, as far as my experience goes, we do not see the four periods described by Charcot, and often seen at the Salpêtrière, viz.:

1st. Epileptoid period.
2d. The period of contortions and large movements.
3d. The period of impassioned attitude.
4th. The period of delirium.

As a general thing the hysterical convulsion with us does not include the period of impassioned attitudes, and often there is no delirium.

Hysterical paralyses and contractures are not uncommon in this country, and present fully as marked symptoms and stigmata as the French cases. Illustrating these varieties, I report the following cases:

CASE I.—A boy, aged eight, Hebrew, was brought to my office to be treated for a talipes equinovarus of the left foot. The history of the case was, briefly, that the boy did not wish to go to school, but was compelled to do so much against his will. That after a few weeks attendance his foot became distorted and that one morning it was found in the extreme position of equinovarus. Examination found anæsthesia of the foot and outer side of leg. Great pain was complained of in the contracted muscles whenever they were stretched. He was unable to walk or stand. An electrical examination of the relaxed muscles showed a normal reaction to both currents. The treatment was: first, prohibition of tea, which he took twice a day, spinal douche, 40° F., fifteen seconds daily; alternate hot and cold douches to the foot and leg. The mother was positively assured in the boy's presence that he would speedily recover, which he did at the end of two weeks.

Six months later the mother complained that her son was always threatening to break her china, to tear her dresses, whenever he was crossed in any way. He would scream murder whenever he was reprimanded; would send his mother and sister on useless errands, under threats of setting the house afire. I report this subsequent history to show that although the hysterical club-foot was cured, still his psychic life was far from normal.

CASE II.—Boy, aged seven years, was brought to the Fitch Dispensary in March, 1891, because latterly he could not speak except in a whispering voice and with a great deal of stammering. On questioning, it was learned that he had always been emotional, that he frequently had nightmare, and was a somnambulist. Examination of sensibility found anæsthesia of pharynx, no narrowing of the visual field. The boy answered in monosyllables in a low whispered voice with a great deal of effort and stammering. He was greatly encouraged by hearing a favorable view taken of his case. The directions for hydrotherapeutic and vocal exercises, together with a simple diet and the administration of iron, effected a cure in a few weeks of the stammering and sleep disturbance.

CASE III.—A girl, aged ten, of German parents, was sent to me by Doctor Diehl of this city, with the following history: A year ago she had the measles and ever since that time she had been in poor health. Twenty-eight weeks before coming to me she lost strength rapidly, which she continued to do until she was just able to stand alone. She had on occasions vomited blood. On examination I found her unusually bright and intelligent. She was anæmic and poorly nourished,the reflexes normal, muscles not atrophied. When sitting down, there was nothing noticeable about the feet. As soon as she stood up, however, the left foot took the position of extreme talipes varus. When left alone she swayed backward and forward, and then fell on her hands and knees. If assisted, she could take a few steps, walking upon the internal malleolus. She did not complain of pain unless an attempt was made to straighten the foot while she bore her weight upon it. As soon as the foot was raised from the floor it assumed the normal position and could be moved in every direction. Examination of cutanœous sensibility showed complete anæsthesia to heat and cold, and to the points of the anæsthesiometer on the entire left side, and of the right leg, both conjunctivæ, the muceus membrane of the lips, mouth, pharynx and nose, and there was narrowing of the visual fields. There was complete paralysis of the arm.

A second examination made three days later showed an increase of symptoms in that the right foot assumed the same deformity as the left, when she bore her weight upon it. Pressure with my hand against the sole of either foot failed to bring on the change in shape. A week later I was called to the house, as the poor child had lost all voluntary motion in three extremities, viz., both legs and the left arm. Examination with the faradic current showed electric irritability of all the muscles. There was no pain on using a very strong current. The field of vision in the left eye had contracted to a point. I decided to treat the child by suggestion in the waking state and to that end made use of the following method: In the presence of the child, it was explained to the incredulous mother and friends that, although the child was completely paralyzed in three limbs and although the other arm might become involved, still there was no doubt in this disease that the child would absolutely recover. I further explained to the child that, as she could not lift her left arm, it would also be difficult for me to lift it. I then tried to raise it, and instantly she opposed it. The same experiment was tried with the legs as she sat in her chair with her knees bent. I first told her I would try and straighten the left leg and she would find I could not do it easily. An attempt to straighten it was then made, and her flexors contracted in opposition. When the limb was extended, she was told to try and flex it. She could not do so, but she resisted my forcible extension again and again. The same thing was tried with the extensors. It was found that they would resist to a moderate degree any attempt to flex the limb, but would not contract under any other condition.

To discover whether this contraction, which we will call the contraction of antagonism, was due to suggestion or not, I explained to the mother and child that that would not happen with the right leg, for that was in a different stage of the disease. The right leg failed to show the antagonistic contractions.

As a further help toward impressing the child, I invited at different times Doctors Stockton, Cary, Parmenter, Snow, Bergtold and others, to see the child with me. We always told her emphatically that she would entirely recover and that there was nothing rare, nor strange, nor puzzling about the case. I then commenced to use a large magnet. In order to teach the patient the power, I lifted several pieces of iron with it, then held the magnet over my left arm and apparently allowed my hand to be drawn toward it.

For three weeks the magnet was applied to the different muscles with the suggestion that the limbs would regain their power through the magnet. After the ninth treatment I was surprised one morning to see the child walk into my office unaided.

The mother explained that the day before the child, on walking, had said that her arm felt different and she believed she could raise it, which she did. She then wished to try to walk, and without assistance she arose from the bed and walked across the floor, without clubbing of the feet.

An examination showed that the anæsthesia had all disappeared and that she was able to use all her muscles. The field of vision in both eyes was normal. From that time she continued to improve in flesh and strength under the administration of iron, malt and cod-liver oil, and the daily use of the spinal douche.

This case has been reported in details, as it was a most aggravated case of hysterical paralysis, and because it was so typical. The magnet was used in preference to hypnotism, because its mysterious force is a powerful factor in impressing the imagination of a child, and in many cases it has proven an invaluable means of suggestion.

Hypnotism I have found to be less satisfactory. A given symptom may be removed, but other new ones are apt to take its place.

CASE IV.—Hysterical deafness. A boy, aged nine, was sent me by Dr. Grove, of this city because he was nervous. His mother explained that he could not sleep well at night, that he had night terrors, and at times had walked in his sleep. His deafness came on after a severe fright during a thunder storm. He was a poorly nourished, anæmic boy, restless, and muscles always in motion. He could only hear the loudest sounds; he could not hear the watch ticking when placed against his ear. Examination by tuning-fork demonstrated that he could hear it when placed against the teeth and against the mastoids. The drums were normal in appearance. The hearing of the tuning-fork through the mastoids was a great surprise to him, and he felt that in some way I was trying to cure him. Taking advantage of this state of mind I suggested to him that he could hear the tuning-fork when held near to the ear. A trial was made and the boy heard. He was told he was cured, and to prove it, his mother spoke to him in ordinary conversational tone, and he heard perfectly.

This deafness was of one year's duration, and in all that time he and his mother said that he had nerer heard ordinary sounds or conversation. The cure must be accredited to the tuning fork as a suggestive agent.

These cases occuring in children in no wise differ from hysteria in the adults, except in the susceptibility to treatment.

The prognosis in infantile hysteria is far better than in the adult. The more unusual and changing the character of the symptoms, the more favorable is the prognosis. The treatment of the majority of cases should include hydrotherapeutics, out-door life, rythmical gymnastics, therapeutic suggestion and such constitutional remedies as are indicated, usually malt, hypophosphites, cod-liver oil and iron. Removal of the patient from home is very useful; but as it is often impracticable, it is fortunate that it is not imperative.

CONVULSIVE TIC.

(Med. Record, Feb. 27, 1892.) G. M. Hammond, M. D., finds that conium or atropine, properly used, will in the majority of cases control the manifestations of this disease if it is not due to an organic lesion, and that by combining small quantities of bromides with these drugs, recovery is greatly accelerated. In his experience, cases have yielded more readily to conium than to atropine. Both should be given at first in small doses and the quantity gradually increased. He usually begins with $\frac{1}{100}$ of a grain of atropine and slowly increases it to $\frac{1}{40}$ of a grain. It is seldom necessary to go beyond this point. With conium he has used the fluid extract and the alkaloid conine, but observed no greater benefit from one than the other. Beginning with an initial dose of five drops of the fluid extract, he increases the dose one or two drops a day until the tic ceases, or the physiological effects of the drug are produced. Some patients can take thirty to fifty drop doses without inconvenience, but upon the advent of weakness, vertigo, or double vision, the dose should be reduced to the original quantity and increased as in the first instance. The majority of cases will be relieved by smaller doses than are required to exhibit evidences of toxæmia. A. F.

THE TREATMENT OF INSOMNIA.

BY JOSEPH COLLINS, M.D.,

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THE object of the following brief paper is to discuss the best method of treating that most distressing of all symptoms, insomnia, and to reach some conclusions as regards the relative merits of some of the recent hypnotics, particularly sulfonal and chloralamid. These two particularly, for the reason that they both have really passed the probationary period and are now known to be hypnotics that can be relied upon. Personal experience with the former has not been so extensive as with the latter, and so it is that more stress will be laid on chloralamid. This drug, which is a formidate of chloral, has been for about three years before the profession, and its daily use shows that it has properties to recommend it. Within the past six months I have used it in twenty-seven unselected cases of insomnia associated with various troubles. These are distributed as follows: Three cases of phthisis, one of pneumonia, six of neurasthenia, three of alcoholic delirium and insomnia, one of senile insomnia, one choreic, three cases of sciatica, three of lithæmia associated with headache, one of opium habit, and four cases of insomnia from over-work, excitement, and so on, one of meningitis. I have been particularly struck with its efficacy in cases of insomnia associated with two conditions, viz., pain and excessive irritable activity of the brain. One of the cases of sciatica, which was treated by the ordinary methods for this affection, was made very comfortable by the administration of two twenty-grain doses of chloralamid within an hour of each other and given before retiring. In another case of sciatica which had been under observation for upward of two years and in which attacks occurred about three or four times a year, the pain could be relieved by large and frequently repeated injections of morphia; but sleep would not come with the disappearance of the pain, and many were the hypnotics tried, but the hydrobromate of hyoscyamine and chloralamid were found to be the most efficacious.

In conditions of excessive irritable activity of the brain very good results have also been obtained from its use. This variety of insomnia is without question the one which most taxes the physcian's therapeutic diplomacy, and causes suffering, compared with which that borne by Prometheus when bound to the rock was nothing. It matters not whether we explain the occurrence of this form of insomnia by alluding to a probable cerebral anæmia or to unstability in the nervous protoplasm, the fact still remains that we are continually being consulted by patients who tell us, that as soon as they get in bed their thoughts begin to run, not acutely, but just crawl along, on a certain track, and as soon as they try to concentrate their mind to dispel them, they recur on in a diffierent line. It may concern their business or occupation of the day, but frequently it does not, and after continuing for a short time, the patient rolls and thrashes about, until sleep comes from sheer exhaustion. This state of affairs continuing, a vicious circle results; the loss of sleep produces general anæmia and depravity of general nutrition, and this condition, then, has insomnia for one of its most aggravating symptoms. The radical plan of treatment, which is to change the entire mode of life and surroundings of these patients and place them under conditions where mental wear and tear can be obviated and the interchanges of bodily metabolism will be quietly but effectively performed, is unquestionably the one to be given if possible, but with many of our patients it is about as feasible to die as to think of giving up their business or employment for any protracted length of time. And it is here in these cases, as well as adjuvants in cases where the radical plan of treatment can be carried out, that I have seen most salutatory results follow the administration of chloralamid in from twenty to thirty-grain doses before retiring; a dose which generally does not have to be repeated more than once in the same evening. Associated with this plan of treatment I have seen good results follow when the patient carries out a plan of changing his habit of having the bowels move from the morning, which is usually the customary time, till immediately before retiring. The feeling of pleasurable lassitude following defecation and the desire to lie around can then often be tided over into refreshing sleep. This I am convinced, associated if necessary with a moderately warm bath of very short duration, will be followed by gratifying results. For instance, in a case of a gentleman who had been laboring hard for some years to acquire a certain business and had, seen his ambition gratified by his successful efforts, was troubled so distressingly with this form of insomnia that he assured me that he would become insane if relief was not given to him. I was convinced that alcohol in the shape of mulled claret and sulfonal would be his affinity, but he had scruples about taking the wine, and he was put upon the drug, with hot water, and this acted favorably; it was afterward changed to chloralamid, and with still better results. An important feature in the treatment of these cases is to beware of giving drugs which will in any way militate against the excretion of deleterious matters from the system and lower the condition of vascularity, such as the preparations of opium, for instance, and the bromides. Kny has recently shown that the admistration of chloralamid does not produce any marked effect on blood pressure, especially the pressure in the vessels supplying the brain; and this, associated with its well known property of stimulating the respiration, has led me to administer it scrupously in a case of meningitis which I recently saw. In this patient, a young lady of thirty, was attacked with all the prodroma of meningitis, such as the distinctively excruciating headache, vomiting, sluggishly elevated temperature of 101° to 102°, and the quick hard resistent pulse and complete insomnia, with delirium after a short interval. She had been a close attendant on a case of scarlatina, and it was thought at first that it was that disease appearing and with such severity on account of the patient's exhausted condition. But the symptoms of meningitis soon made themselves too clearly manifest to be mistaken, and among the other symptoms which the patient developed was a marked slowing of respirations down to nine or ten per minute. For this atropia was administered; but it was not until it was associated with chloralamid to control the insomnia and delirium that improvement began to be manifest.

Those cases where its use has been followed with least gratifying results have been in pneumonia and neurasthenia. In the insomnia which is associated with the asthenic stage of pneumonia the drug does not seem to be efficacious; and this is in keeping with its physiological action on the blood pressure; for a drug in order to be efficacious here must lower blood pressure quite markedly, a state of affairs which chloralamid does not bring about. In the insomnia of neurasthenia it is like most of the other hypnotics used, sometimes serviceable and sometimes not. It has at least decidedly in its favor the fact that when it does produce sleep, it is more nearly natural than any other artificial sleep, and is rarely followed by headache. I say rarely, for in one or two instances where the drug was taken in excessively large doses the patient did complain of some uneasiness in the head the following morning; but the rule will probably hold good that when taken in reasonable doses of from one to two scruples headache will be a rare symptom following it.

In a case of persistent insomnia after an attack of delirium tremens, associated with illusions and hallucinations, most excellent results were obtained by the administration of two teaspoonful doses of the elixir of chloralamid, now on the market, repeated every two hours until sleep set in. And this after the efficacy of chloral, paraldehyde, sulfonal, and hyoscyamine had been exhausted. In this case the results were particularly gratifying, for the mental disturbance which had been causing the patient's family much discomfort soon began to disappear, after some days and nights of sleep.

In a case of the opium habit, both by taking morphia and by smoking it, the patient could be frequently induced to quit the drug for considerable periods, when sleep was produced by chloralamid, but she gradually drifted back to her old habits, and track of the patient was lost. Without entering into detail in respect to each case treated, it seems that the following conclusions can be drawn:

1. Chloralamid is a safe and one of the most reliable hypnotics.

2. It is not ordinarily followed by distressing after-symptoms, particularly headache.

3. It is especially valuable as a hypnotic where pain is a prominent factor, but not violent.

4. In cases of insomnia, where there is excessive activity of the brain, it is also useful.

5. On account of its stimulating activity on the respiratory function, it is the hypnotic *par excellence* in nervous exhaustion, associated with an asthenic condition of respiration and symptom complex indirectly dependent on this, brought about by defective oxidation and the formation of unstaple chemical compounds in the system.

6. On account of its very slight action in depressing the circulation, it can be given in diseases associated with a weak heart, with greater safety than most of the other hypnotics, not excepting chloral itself.

7. It is conveniently administered in the shape of an elixir, and this overcomes the need of dissolving it.

8. Its dose is from one to three scruples, administered one hour before sleep is desired, and this should not be repeated within two hours, for occasionally the action of the drug is delayed.

In contrast with sulfonal there is much to be said in favor of each. Sulfonal is also an excellent hypnotic, and has, as is noted by Francisco, when taken in two-scruple doses, an action in strengthening the systole and increasing the tone of the vessels in general. But this action on the vessels is not continuous, and after a variable length of time it is followed by a dilatation and lessening of the elasticity of the vessels, first on the cerebral and then on the peripheral vessels. And here probably is the explanation of the tendency for sulfonal sleep to go over into the next day when it loses some of the characters of natural and tranquil sleep which are attendants of the sleep produced by smaller doses. Sulfonal when given in moderate doses, however, does not cause any injurious effects on the circulation, respiration, appetite, digestion, temperature, or on the general health.

These points are well brought out by Johnstone, in an article in the *Journal of Mental Science*, for January of the present year. This author affirms that it has a distinct sedative action in mental excitement or distress, and is employed with great benefit in cases of insanity, especially in cases of acute mania and other forms of recent origin. The benefit in these cases was very marked, and especially when the doses were continued, the sleep would be prolonged into the day, and then by a gradual interruption in the regularity of administration, the improvement in the mental condition would become apparent.

In some cases of insomnia it was not all unusual for the patient to sleep the whole night through and continue to be drowsy during the day when under the continued use of the drug.

It has been observed by physicians here and abroad, that the continual taking of sulfonal is not a trifling matter, and such a condition as "sulfonal habit," or, better still, the chronic toxic results of sulfonal may show themselves. Although I have never seen such result in my limited experience with the drug, Gilbert, of Baden-Baden, who read a paper on this subject before the Southwest German Neurological Association, a year ago, was good enough to show me some cases that he had under treatment at the sanitarium. One of the patients had become rabid in his desire for the drug, and claimed to suffer some such mental and bodily distress that morphia habitués suffer when they are deprived of their enslaving agent. But I am inclined to believe that this is greatly exaggerated, as it hardly agrees with our conception of the physiological action of the drug to have such symptoms occur even when its use is long continued. Undoubtedly all these products of coal tar distillation, when used continually for the relief of some distressing condition, will eventuate in a condition of the body which demands a continuance in the use of the substance which brought about the alleviation. That it may produce toxic effects like the rest of its congeners no one attempts to deny, and this chronic poisonous activity is manifested principally by innervation and later, in all probability, by change in the peripheral nerves; but this is not habit, it is poisoning. Chloralamid will undoubtedly do the same thing if misused; but it is the use, and not the abuse of these drugs which we have under consideration, and so long as their administration is confined to the hands of the physician it is not likely that they will become responsible for many ruined *morales.* The indiscriminate use of these drugs, as such use of any nervine is to be descried, and confining their administration to diseases with a clearly marked indications, will not be followed by abuse or disastrous consequences.

As to which of these two hypnotics we shall chose in the treatment of any given case of insomnia, we must be guided largely by the factors before mentioned. Where we wish to get very rapid action we can probably do so more efficaciously by the use of sulfonal dissolved in boiling water and taken as hot as possible, the drug in this way becoming at once absorbed and sleep frequently occurring in from fifteen to twenty minutes. In conditions where chloral is indicated, but some intervening symptoms contra-indicate its use, such as weak heart and respiration, as in the asthenic stage of acute disease, or in diseases of the heart and lungs, chloralamid can be substituted with safety and with good results.

EVIDENCES OF HEREDITY.

By WILLIAM C. KRAUSS, M.D.,

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NEUROLOGISTS in the practice of their specialty are perhaps able to produce stronger evidences to the support of the theory of heredity than any other class of professional men. That the nervous system is intimately associated with this process of transmission, no one will deny, and some observers go so far and classify such affections, as tuberculosis, cancer, etc., among the neuroses, because of their hereditary transmissibility.

I have lately had occasion to observe a family in which heredity played such an important rôle that I think the case worthy of being recorded.

Having been called to see a child suffering with cerebro-spinal meningitis, I learnt that the mother, who possessed a very small head, had lost three children previously with cramps, and furthermore that all had enormously developed heads. The child in question was also macrocephalic, and this led me to make a thorough investigation.

The father, a tailor, aged thirty-six years, although in good health, has been annoyed much of late with lung difficulty, which I surmise is of tubercular origin. The apex of the right lung shows signs of beginning consolidation, with moist crepitant râles, and the respiration is broncho vesicular in character. Of his parents and grandparents he knows but little, having immigrated to this country when quite young.

The mother's parents are still living and healthy. Out of a family of eleven children, six died with "cramps," one of croup, and four are living. The mother's history is as follows:

Age, 27; height, 4 feet 11 inches; weight, 110 pounds; complexion, fair; hair, brown; disposition, petulant, fractious; intelligence is much below mediocre. Early history: She had considerable trouble at dentition, otherwise has always been in the best of health. She menstruated when thirteen years old, and married at nineteen.

Her present appearance is at once conspicuous, owing to the small size and slope of her head. The face, rather broad, offers nothing unusual. The two sides are symmetrical, the eyes, ears, lips, cheeks and nose are well developed, and perform their various functions without any disturbance. The forehead is elongated, somewhat triangular in shape. The head is moderately large just above the neck, then tapers cephalad, becoming pyramidal—a malformation sometimes called oxycephalus or sugar-loaf head. This anomaly, generally met with in idiots, epileptics, etc., is due to a premature union of the parietal with the temporal and occipital bones. The measurements taken a few days ago are as follows:

Circumference,	- -	48	centimeters.
Occipito-frontal,	diameter,	14	"
Bitemporal,	"	13	"
Biparietal,	"	13	"
Occipito-mental	"	20½	"
Sub-occipito bregmatic		16	"

With the exception of the head, the rest of her person does not deviate from the normal.

Married in 1884, she has given birth to five children.

The first child, a boy, was born March 25, 1884, after a comparatively easy labor. The child's head was exceedingly small as compared with the rest of the body, and as a member of the family remarked, it was "no larger than an apple." Otherwise the child was well developed, nursed well, slept well, until the latter part of June, when its head began to increase rapidly in size. In July, 1885, it was taken with convulsions, and died twenty-four hours later.

The second child, a boy, was born March 25, 1886, after another easy labor. Its head was also very small, otherwise it was well developed, and was in good health until the first appearances of dentition, when the head began to grow rapidly in size, terminating in hydrocephalus. In February, 1887, it was seized with convulsions, vomiting, head thrown backward, and three days before death became unconscious. It died February 13, 1887. The physician's diagnosis was "hydrocephalus with cerebro-spinal meningitis."

The third baby, a boy, was born September 3, 1887. The labor lasted but two hours, and the child appeared well developed except its head, which was likewise very small. About dentition time the head became macrocephalic and in April, 1891, it died, exhibiting all the symptoms of a basilar meningitis. The circumference of the head after death was sixty-four centimeters. Although three and one-half years old, he could neither walk, talk nor sit alone, and showed unmistakable signs of arrested cerebral development.

The fourth child, a girl, had a history similar to its predecessors; microcephalus at birth, becoming hydrocephalic at dentitition, and dying in convulsions on May 2, 1891.

The fifth child, a girl, was born August 5, 1890. Its head was even smaller than any of the preceding children and remained so. In February she began to emaciate, her body and extremities being reduced to a mere skeleton. In June, 1891, she died with cramps.

None of these children appear to have had enlargement of the bones, joints or glands, and the lungs seemed to have been in good condition.

To review the case briefly, then, we have here a family of five children, microcephalic at birth, dying in convulsions before dentition, or else becoming hydrocephalic at this time and dying of meningitis, probably tubercular in character, later on. The father of this family has a history of tuberculosis; the mother, a microcephalus, offers symptoms of cerebral degeneracy. To my mind a soil more fertile for the propagation of neuropathic and physchopathic tendencies cannot exist. Being convinced of this fact, I informed the parents whose home had been made desolate by the mysterious but all-wise treatment of nature, and counselled them to live henceforth, if not a virtuous, then a sterile life.

OBITUARY.

WILLIAM R. BIRDSALL, M.D.

Dr. William R. Birdsall was born in Greene, Chenango County, this State, in 1852, and graduated from the University of Michigan in 1876, and the College of Physicians and Surgeons, New York, in 1877. After studying abroad for several years at the principal medical centres, he began work in New York as a neurologist. For a time he was Chief of Clinic at the College of Physicians and Surgeons, and for several years Professor of Nervous and Mental Diseases in the Woman's Medical College. He was President of the New York Neurological Society in 1885–6. He was Attending Physician to the Manhattan Eye and Ear Hospital, the Deaf and Dumb Asylum, and an active member of the Academy of Medicine, the County Medical, American Neurological, Pathological, Lenox and Geographical Societies. Much of his time was given to literary work, and he contributed largely to the medical journals and wrote many valuable monographs. For three years he was the author of the articles on Diseases of the Spinal Cord in "Sajou's Annual." He wrote much on the subject of Nuclear Ophthalmoplegia, and was one of the first to describe the pathology of this disease. A few years ago he prepared for publication a work on electro-therapeutics, but the failure of the publishing house interrupted its issue, with the result of its remaining in manuscript. It was, however, his intention to revise and publish the book. He had also prepared for presentation at the coming meeting of the American Neurological Society a paper upon the Life and Labors of Dr. Westphal, with whom he had worked while abroad. All his literary efforts were of a superior kind, characterized by great care, especially in the arrangement of the facts, as well as by a clear enunciation of the principles. As an authority on the subjects in his special field he had a high reputation, and he enjoyed a good consulting practice. Those who knew him could not but admire his character, for while by nature endowed with rare mental superiority, he was nevertheless of a modest retiring disposition. His friends will remember him as a well informed and pleasant companion and a thoughtful and conscientious physician. He has passed away at a time of life when the powers of manhood are at their prime and when the best work of life is generally being done, but not yet accomplished. His health was never robust, and it was denied him to labor as others could, yet to the extent of his strength he strove to aid his race in his day and generation. His hand was ever ready, his heart was ever willing to take part in any movement that might benefit his brothers. All who knew him will mourn his loss as that of a personal friend, who by his very simplicity of character and honesty of purpose endeared himself to all with whom he came into relation. Although he had been in failing health for some time, he attended to his daily duties until about a week before his death, when he was forced to remain at home. The end, however, came sooner than had been expected, and he died suddenly from a pulmonary hemorrhage on June 7th. He leaves a widow. A. FREEMAN.

Inasmuch as in the death of Dr. William R. Birdsall, the New York Neurological Society has lost an active member, whose eminent services in our department of medicine has secured for him our highest respect, and whose many attractions of character and personality have awakened our warmest attachment; therefore

Resolved, That we record upon our minutes this expression of our great sorrow at his untimely death; of our appreciation of his eminent ability, untiring industry, and scientific accuracy and skill; and of our tender regard for the many admirable qualities which will endear his memory to us for many years.

Resolved, That these resolutions be published in the current medical journals, and that a copy be sent, as an expression of our sincere sympathy, to the family of our diseased friend.

M. ALLEN STARR, M.D.,
CHAS. L. DANA, M.D.,
GRÆME M. HAMMOND, M.D.,
Committe of the Council.

Periscope.

EXCERPTS WILL BE FURNISHED AS FOLLOWS:

From the Hollandish, Swedish, Danish, Norwegian, German, Portuguese, Roumanian, Spanish and Italian:
F. H. PRITCHARD, M.D., Norwalk, O.

From the Swedish, Danish, Norwegian and Finnish:
FREDERICK PETERSON, M.D., New York.

From the German:
WILLIAM M. LESZYNSKY, M.D., New York.
BELLE MACDONALD, M.D., N. Y.

From the French:
L. FISKE BRYSON, M.D., N. Y.
G. M. HAMMOND, M.D., N. Y.

From the French, German and Italian:
JOHN W. BRANNAN, M.D., N. Y.

From the Italian and Spanish:
WILLIAM C. KRAUSS, M.D., Buffalo, N. Y.

From the Italian and French:
E. P. HURD, M.D., Newburyport, Mass.

From the German, Italian, French and Russian:
ALBERT PICK, M.D., Boston, Mass.

From the English and American:
A. FREEMAN, M.D., New York.

From the French and German:
W. F. ROBINSON, M.D., Albany.

The Editor will not accept as ORIGINAL ARTICLES and CLINICAL CASES those that have appeared elsewhere.

Authors are requested to make none but typographical corrections on the proof sent to them. The manuscript must represent the final form in which the article is to be printed.

PATHOLOGICAL.

BILATERAL PARALYSIS OF THE EXTERNAL RECTI.

In the "Progrès Médical," 1891, No. 36, Dufour reports three cases of commencing tabes with the unusual symptom of isolated bilateral abducens paralysis.

I.—Male, fifty years of age. Diplopia had existed for some time. Paralysis of both externi, contracted pupils, feeble reaction to light. Knee-jerks present. Romberg's symptom. No evidence of syphilis.

II.—Female, fifty-four years of age. Twelve years ago attack of paralysis of third nerve (left). One year later transient paresis of both externi. Two years ago paralysis of left abducens; soon after the right was also affected. Absence of light-reflex. Headache and pain in intercostal and bulbar region. Knee-jerks present. No evidence of syphilis.

III.—Male, thirty-eight years of age, without signs of syphilis. Two years ago transient diplopia, which has now become permanent. Bilateral abducens paralysis. Loss of knee-jerks. Weakness in legs. Romberg's symptom.

The author assumes the presence of a nuclear lesion in all of the cases, and emphasizes the diagnostic and prognostic value of similar observations. (Neurolog. Centralblatt, 1892, No. 2.) W. M. L.

FURTHER STUDIES ON SYPHILIS OF THE CENTRAL NERVOUS SYSTEM.

The "Centralblatt f. Nervenheilkunde und Psychiatrie" contains a communication by Moeli and Marinesco which presents some additional facts in regard to these cases. The report was worked up from four cases, the first of which presented as the only symptom, complete paralysis of the motor oculi. The pathological conditions found at post-mortem examination consisted of a tumor in the posterior cerebral region, simple infiltration, and degeneration of the nerve trunks with adhesions of the meninges. Another case was one of gumma of the pons, with alterations in the vessels of the cord. There were no characteristic symptoms during the life of the patient, pointing to tumor. A third case was gumma of the posterior column, with distinct diminution in the gray matter of the central spinal canal. Considerable atrophy could be seen in the region of the nuclei of the hypoglossus, the median part of the crus, and in Broca's centre. The nerve trunks were normal. Clinically the disease had not presented a single indication of paralysis, but symptoms pointing to polyneuritis. The fourth case showed a small spot of softening in the pons. There was some degeneration in the nerve fibres of the olivary body and of the arcuatæ interna. The authors submit the following *résumé* of the microscopical findings in these cases. In the syphilitic cases, the alterations found in the vessels were of an inflammatory character, and indicated degenerative changes consisting of hyaline thickening of the vessel wall with, in some instances, an almost entire obliteration of their lumen. The alteration in the nerve tissues seemed to be brought about by the disturbance of circulation due to the changes in the vessel wall resulting from the syphilitic poison. The primary disturbance was rarely found to be confined to Goll's column, the entire posterior columns were usually involved. The so-called syphilitic tabes cases did not present a clearly degenerative type of change in the cord. It was well known that other forms of poison could bring about degenerations in the cord, and to differentiate was not so easy. It was very probable that the degeneration in the nerve fibres was the result of a primary disturbance of the nerve centre; that the poison acted at first upon the ganglion cells, and that the change in the nerve fibre was a secondary degeneration. It is not yet positive by any means that tabes is the direct consequence of such changes. The writers admit, however, a hyperplastic form of syphilitic tabes, such as pseudo-tabes and syphilitic myelitis—conditions from which, with a proper appreciation of the case, recovery can be expected from. B. M.

EPILEPTIFORM ATTACKS FROM TÆNIA.

Martha has gathered twenty-two observations where epileptiform attacks could undoubtedly be traced to the presence of tænia. According to him the attacks are not much different from those of classic epilepsy. Expulsion of the parasite causes cessation of the spasms. Yet the attack has not the characteristic brusqueness of true epilepsy. The patient finds time to throw himself upon a bed, or to call for help, while grave injuries and falls are exceptional. The initial cry, biting of the tongue, and frothing at the mouth are inconstant signs and of no great diagnostic importance. The convulsive and comatose periods are of longer duration than in true epilepsy; the attacks have a tendency to become periodic. The male sex is more frequently attacked than the female. Nervous hereditary or personal antecedents have no important influence. Unilateral movements are not regularly observed as in true epilepsy. (Arch. Général de Méd., Nov. and Dec., 1891.) F. H. P.

CEREBRAL HEMORRHAGE FROM INFLUENZA.

Virchow presented to the Medical Society of Berlin the brain of a young man of twenty years, who succumbed to the grippe. The principal lesion was a hemorrhage situated in the cerebral cortex of the left hemisphere, near the vertex. The hemorrhagic focus was of the size of a small apple and surrounded with a narrow zone of punctiform hemorrhages, accompanied with œdema. In the vicinity of this hemorrhage were two small abscesses, where the pia presented fibrino-purulent infiltration. The same individual was attacked by hemorrhagic nephritis with multiple foci. There was found, besides, a small abscess of the liver. A common point of departure could not be found to explain these lesions as embolic. He suffered from a slight mitral insufficiency. The lungs contained several broncho-pneumonic foci, in the red stage of hepatization, with hyperæmia and œdema. (Le Bulletin médical, No. 88, 1891.) F. H. P.

CEREBRAL ŒDEMA.

Huguenin (Correspondenzblatt f. Schweizer Arzte, Bd. xix.; No. 11) is of the opinion, which is based upon the result of anatomical observations, that circulatory disturbances within the cranium do not produce fatal œdema, until changes occur in the brain and skull. Among such changes are obliteration of the lymph paths, cessation of cranial growth with concomitant brain pressure, and brain disease itself. He endeavors to show the improbability of œdema resulting from congestion by the important fact that in children dying from hyperæmia, œdema, or mild hydrocephalus, an incomplete streptococcus meningitis was always demonstrable. In children, death from œdema following congestion, presupposes a more definite condition, such as chronic meningitis. The same holds good in adults, where there is dementia paralytica or meningitis from tremor. The fatal cases of œdema cerebri from premature synostosis, acute hemorrhage, tumors, abscesses, or traumatism, must be classed with those forms, which can only be explained by the combination of a pre-existing pressure with *relaxation hyperæmia*. W. M. L.

RESEARCHES UPON THE SENSIBILITIES IN THE INSANE.

Dr. Luigi Roncoroni (Giornale della R.-Accademia di Med. di Torino, October, 1891). The author bases his conclusions upon a careful study and examination of seventeen melancholics, twenty-one epileptics, thirty monomaniacs, five paranoiacs, six paralytics, and fourteen maniacs. He finds some disturbance of sensibility in only 2.4 per cent. of all cases.

2. The muscular and tactile senses are almost constantly normal, especially so in the paralytics.

3. The sense of hearing was found blunted in 35 per cent.

4. In the sense of taste there seemed to be some disassociation in the gustatory sensations.

Disturbances of taste and smell are very frequently met with in the insane.

5. In epileptics, disturbances of sensation are most frequet, then in melancholics, and least in the maniacs.

6. The degree of dullness of the general, tactile, and especially the sensibility of pain, is directly proportional to the condition of the patient. W. C. K.

CEREBRAL HEMORRHAGE.

E. Mendel. Why do hemorrhages into the brain occur most frequently from one of the small branches of the artery of the corpus striatum, while hemorrhages from the cortical blood-vessels are less frequent? This question has recently received the attention of Mendel (Berliner klin. Wochenschr., 1891, No. 24). The diseased condition of the cerebral vessels is the cause of the hemorrhage. Miliary aneurisms are developed, which burst when the arterial tension is suddenly increased. These aneurisms are found most frequently and in greatest number on the art. corp. striat. This is illustrated by an ingenious experiment. In accord with his investigations and those of Heubner and Duret, we may assume with certainty that the arteries, which supply the large ganglia and white substance, are terminal arteries, while the arteries of the cortex he proves, in opposition to Duret, form an extensive anastomotic plexus. This distribution was demonstrated by a system of rubber tubes. A rubber balloon representing the heart, and an attached rubber tube serving as the aorta and carotid. From this two systems of tubes arise, corresponding with the arrangement of the cerebral vessels, one anastomosing with each other and exemplifying the cortical arteries, and the other representing the arteries of the corpus striatum (terminal arteries).

If, by pressure on the balloon, an over-pressure is produced, all the tubes, the mercury manometer, adjusted in suitable places, will invariably indicate the following result: The pressure in the cortical arteries is always much less than in the carotid, while the pressure in the art. corp. striat. is only slightly less. If we transfer these conditions to man, the fact that the arteries of the large ganglia burst much more frequently than the cortical arteries is accounted for by the former not being protected by special arrangements against the effect of increased pressure like the anastomoses of the cortical vessels. The increase of pressure which occurs so frequently in life, in consequence of emotional disturbance, physical exertion, excessive use of coffee, alcohol, etc., enlarges the diameter and distends longitudinally the walls of the arteries which are especially exposed to it. The frequent recurrence of this process leads gradually in advanced age to atrophy of the muscular coat and miliary aneurisms. A sudden increase of pressure ruptures the aneurism, and this produces the apoplexy. M. explains the attack as being due to the variations in blood pressure, while the anæmia in the cortical arteries accounts for the loss of consciousness and the other general symptoms. As the most rational plan of treatment during the attack he recommends absolute bodily rest, especially the avoidance of any movement of the head, which should be kept elevated. (Neurolog. Centralb., No. 24, 1891.) W. M. L.

CLINICAL.

RELATIONS BETWEEN CHOREA AND EPILEPSY.

According to G. R. Trowbridge, M. D. (Alienist and Neurologist, Jan., 1892) there is an intimate relation between epilepsy and chorea, both being due to disturbances of the motor and intellectual centres of the brain, which differ only in degree of intensity. Chorea predisposes toward epilepsy, and epilepsy toward chorea—the former being more frequent. Chorea in one generation may be transmitted as epilepsy in succeding generations, or epilepsy may appear first and chorea in the following generations. Parental neurotic taint may make one child choreic and another epileptic. The diseases may exist simultaneously, but in these cases, the more violent the chorea the less frequent and severe the epileptic convulsions, and *vice versa;* the more violent the epilepsy the less marked are the choreic movements. In these cases there is also more or less mental impairment.

A. F.

HEREDITARY CHOREA.

Wharton Sinkler, M. D. (Medical Record, March 12, 1892) writes: Hereditary chorea, though resembling in many respects Sydenham's chorea, differs in so many of its features that it is essentially a distinct affection. While as a rule there is remarkable uniformity in the symptoms, there may be variations; for example, in the occurrence of the disease at or before puberty. It is not an invariable rule that if the disease fails to appear in one branch of the family, the descendants of that branch have immunity. The arrest of the movements by voluntary effort is not a distinguishing feature of hereditary chorea, as in some cases voluntary effort aggravates the movements, and there are many instances of Sydenham's chorea in which voluntary effort temporarily arrests the movements. Chorea among the adult insane is a different affection from hereditary chorea with insanity. The evidences at hand indicate that the pathology of the disease is a degeneration of imperfectly developed cells in the motor tract, or in the cerebral cortex and in the cord. The occurrence of the disease at an early age in children of some of the cases recorded is confirmatory of this view.

A. F.

CASE OF TUMOR OF THE PONS.

Dr. P. Watson Williams (Bristol Medico-Chirurgical Journal, Sept., 1891). A boy, aged six years, slightly hydrocephalic, had for a time been observed to be growing tiresome and fretful. Occasionally he would tumble about and fall forward or go around like a top and then fall. Subsequent examination showed the face drawn to the right, internal strabismus, pupils large and inactive, left optic disc blurred, and gait unsteady. These symptoms became more marked. The left leg at times dragged, and later became partially paralyzed. Weakness and twitching of right facial muscles appeared, and paralysis of the right sixth nerve. Vomiting only occurred twice. Then followed weakness of left arm, and later paralysis, dribbling, exaggerated left patellar tendon reflex, and finally death from exhaustion. On autopsy, the whole of the pons was found involved in new growth, being much swollen on its anterior surface and bulging above into the fourth ventricle. Both crura cerebi were likewise enlarged by the extension of the growth, and the nerves in relation with the pons distorted and compressed. The third nerves of both sides were flattened and displaced, and the sixth nerves wound round the bulging posterior border of the tumor, especially that on the right side. The tumor proved to be a typical glioma. A. F.

SURGICAL.

A PAPER SPINAL JACKET.

J. Marshall Hawkes, M.D., in the "Medical News," January 16, 1892, describes this invention and its application to a case of spinal injury. A plaster cast is first made from a mould, to be used as a model on which to construct the jacket. Upon this, paper cut into strips is placed in successive layers by means of shellac until a jacket is constructed. To allow of expansion and contraction during respiration, it is divided into two parts on the axillary lines and laced with an elastic cord. This appliance, Dr. Hawkes claims, is the thinnest, lightest, and strongest as yet devised, being on an average less than $\frac{3}{30}$ seconds of an inch thick, weighing only twelve ounces and yet able to sustain a weight of over two hundred pounds. It is also said to be impervious to moisture, and practically indestructible. A. F.

THERAPEUTICAL.

RECTAL ALIMENTATION.

In the "Southern California Practitioner," Feb., 1892, O. D. Fitz Gerald, M. D., recommends the following preparation for nutrient enemata: Take twelve ounces of fresh juicy meat, clear of fat, and of pancreas (fresh also) four ounces. Bruise the pancreas in a mortar with a little tepid water, or liquid beef peptonoids, which is better—keeping the pancreas at about 100° F. Press the pulp on a cheese cloth, to get rid of fat and strings, and keep at 100° F. for two hours, when digestion will be complete. If necessary, it may be thinned by adding liquid beef peptonoids. By placing on ice it can be kept several hours. According to Dr. Fitz Gerald, the quantity of meat required when the patient has to be maintained solely by rectal feeding, is at least twelve ounces a day. The enemata should be given every eight hours; and it has been found that the most convenient times for administration are about seven o'clock in the morning, three in the afternoon, and eleven at night. A. F.

METABOLIC ELECTRIC POLARITY AND ELECTRO-THERAPEUTICS.

(Medical and Surgical Reporter, Nov. 14, 1891.) The main contention of a paper by W. J. Morton, M. D., is deductively that as morbid and normal processes in living tissues, proceed by chemical exchanges (plus an unknown directive tendency) from assimilation of food through excretion, viz: by metabolism, differentiated into anabolism and kalabolism; and as it is probable that chemical exchanges like this cannot occur without exhibition of electric polarity and electric currents; and since experimentally this electric polarity is demonstrable; and since, as the author claims, this polarity must, if due to chemical exchanges of metabolism, be electro-positive in its internal circuit, because katabolic and therefore initiated by the avidity of the oxygen atom (or its congeners) for the atoms of the tissue, subject to combustion, and since, if, as also claimed, this polarity be admitted to be due to chemical changes, it must equally be admitted to represent not only a transformation into electric energy, but also into heat, and all kinetic energies of the living organism. Consequently this initial, invariable, electro-positive polarity may be considered an invariable guide to the electrotherapeutist. Disease, and also normal processes, focal postivity (corresponding to zinc element of a voltaic cell), may be ascertained to be an invariable element of its progress, and hence combated by an inverse current, or applied extraneous medical polarity, which may augment, annul, or reverse the initial focal postivity, and therefore augment, annul or reverse the chemical exchanges underlying it. To employ this guide in practice, normal and morbid metabolism, but first confining attention to the morbid, it may be said to consist of: (*a*) Over-active chemical exchanges, and (*b*) Under-active chemical exchanges. In over-activity: (*a*) An applied (medical) positive pole will increase the activity, *i. e.*, augment the disease. (*b*) An applied negative pole will decrease activity, *i. e.*, lessen disease. In under-activity: (*a*) An applied positive pole will increase the activity. (*b*) An applied negative pole will decrease the activity. Two curative directions only of treatment are open; the negative pole in over-activity, and the positive pole in under-activity. These four results may be obtained by applying a voltaic battery to a single cell. What may be true of morbid processes is regarded likewise true of normal processes. The current of action is explained on the supposition that unstable endothermic substances formed by protoplasmic voltaic action at the negative element during repose, are decomposed and produce a current in an opposite direction. The chemical, oxidizing, kalabolic, protoplasmic foci of the liberate energies are ascertainable by the peculiarity of—the electric—that it inhibits polarity. A. F.

Society Reports.

SECTION ON NEUROLOGY AND MEDICAL JURISPRUDENCE OF THE AMERICAN MEDICAL ASSOCIATION.

The reports, both personal and journalistic, which have come to us all concur that the late annual meeting of the American Medical Association in Detroit was the most successful ever held, and particularly from the scientific standpoint. Admirable work was done in nearly all the Sections, in some of them equaling that done by the national special associations which compose the Congress of American Physicians and Surgeons.

In the general meeting of the Association, an amendment to the constitution was adopted, which it is generally anticipated will have a great influence for good on the future scientific work of the Association and its Sections. This amendment is as follows:

"That each Section of this Association shall elect an Executive Committee of three members, who shall be chosen from among those who have been in attendance upon the sessions of the Section for at least two years; to serve one, two, and three years respectively; and that thereafter, the retiring Chairman of the Section shall take the place upon the Executive Committee of the retiring member of the Committee. It shall be the duty of the Executive Committee, in conjunction with the Chairman and Secretary, to give special attention to the interests of their own Section.

"These Executive Committees of the Sections so formed shall constitute the General Business Committee of the Association. They shall hold daily meetings during the sessions of the Association, and all matters of business not provided for by the Committee of Arrangements, the Board of Trustees, the Judicial Council, the Committee on American Medical Neurology, and Special Committees shall be referred to them without debate.

"It shall be the duty of the General Business Committee to give especial attention to the interests of the Association, and to promote the welfare of the various Sections; to consider all matters of business referred to it by the Association, and report upon them at the earliest possible moment, when the Association may adopt or reject the report as it may deem best."

The programme for the Section on Neurology and Medical Jurisprudence was full and interesting. The Chairman of the Section was Dr. Harold N. Moyer, of Chicago, and the Secretary, Dr. George R. Trowbridge, of Danville, Pa. Dr. Trowbridge, however, was not present, and his place was ably filled by Prof. J. W. Herdman, of Ann Arbor, Michigan. The programme included forty-one papers, although some of those on the list were not presented, or were read by title, because of the absence of the authors of the papers, or the want of time. A few papers not on the list were introduced during the session. Some of the papers were of great value, first among which might be mentioned one on Nerve Regeneration after Suture, by Dr. W. H. Howell, of Ann Arbor, who has recently been elected to a position in the medical department of Harvard University. The paper on Heredity in Primary Degeneration of the Nervous System, by Dr. Sanger Brown, of Chicago, was a valuable contribution, and was illustrated by two patients brought from a distance. Other valuable papers were those by Dr. C. H. Hughes, of St. Louis, on Hysterical Concomitants of Organic Nervous Disease; on Retinal Excitation of Cortical Origin in Visual Hallucination, by Dr. C. G. Chaddock, of Traverse City, Michigan; on Electrical Execution, by Dr. A. D. Rockwell, of New York; on the Reflex Theory in Nervous Disease, by Dr. L. Bremer, of St. Louis; and on Reflex Genito-Urinary Neuroses, by Dr. G. Frank Lydston, of Chicago. Inebriety received full consideration from Drs. Crothers, Dewey, and others, an entire session having been set aside for the consideration of this subject, and various phases of alcoholism.

Dr. James G. Kiernan, of Chicago, who has from the first taken an active interest in the Section, contributed a valuable paper and instructive points to the discussions. Dr. Emerson, of Detroit, and Dr. Evarts, of College Hill, Ohio, were active in the work of the Section. From the East. Dr. F. X. Dercum, and Dr. Charles K. Mills, of Philadelphia, were present and took part in the discussions. Dr. Mills read a paper on Disorders of Pantomime among Aphasics. It is to be regretted that several gentlemen from the East whose names were down for papers were not present. Dr. Moyer, the Chairman, deserves great credit for his energy in preparing and forwarding the work of the Section.

For next year, Dr. Charles K. Mills, of Philadelphia, was elected Chairman, and Dr. James D. Kiernan, of Chicago, Secretary. An earnest effort will be made to have the meeting of next year scientific in character, and repsesentative of all parts of the country; and it is sincerely to be hoped that neurologists and alienists from every section of the Union will take an active part in the work of the Section. No good reason would seem to exist why the meetings of this Section should not be made to equal in merit those of the American Neurological Association, most of the members of which have also the right of membership in the American Medical Association. The advantages to the specialists in nervous diseases and psychiatry, and to the members of the general profession who come together at the meetings of the American Neurological Association are reciprocal. General practitioners from different parts of the country frequently attend meetings of Sections of which they are not active members, to listen to the views of those who are known to them through college work, the journals, or in other ways; and the specialists become personally acquainted with those who are most likely to need their services as counselors. Specialists and semi-specialists from different Sections also are brought into more intimate and pleasant personal relations.

The proximity of Milwaukee to the Columbian Exposition will probably stimulate an unusual number to attend next year the meeting of the American Medical Association from all parts of our own country and even abroad, and all the Sections will doubtless feel the value of this stimulus.

Some of the paper read before the Section at the present meeting will be published in our pages, and we hope next year to much more fully record for our readers the work of this Section, both as represented by its papers and their discussion.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of May 3, 1892.

The President, Dr. M. A. Starr, in the chair.

ACQUIRED MYOTONIA.

Dr. G. Jacoby presented a patient with typical phenomena of this disease. The patient, a male, with a history of chancre some few years ago, but with no further symptoms, first observed, nine weeks previous to presentation, cramps in the hand, and found that flexion of the fingers caused tonic contraction. This condition existed to a marked extent in both hands, some little time elapsing before the hands could be voluntarily opened when flexed. The shoulders were beginning to be involved in process. There were no sensory disturbances. Electrical reaction gave myotonic contraction. Mechanical reaction over the hands, forearms, and shoulders was plainly demonstrated. The patient was a cigarmaker, and the speaker put the question as to whether the disease was a professional neurosis or not? One thing certain it was not a case of Thomsen's disease, but the speaker thought that there might be a link between such cases, because he had seen a similar case of acquired myotonia develop into Thomsen's disease.

LIVE ISSUES IN NEUROLOGY.

Dr. M. A. Starr selected this title for his Inaugural Address, on taking the chair as the new President of the Society. After reviewing the work of the Society for the past few years, the speaker offered a suggestion in the mapping out of future work, it was, that there should be a more general discussion of neurological subjects. Collective investiagtion of disease was certainly of the greatest value.

For such discussion, the subject presented many divisions, especialiy in the cases in which the pathology was still an open question, also in the theory of disease. It should be the aim to connect symptoms with underlying lesions that the pathology would explain the disease. One of the interesting studies should be the possible relation of physiological chemical processes to the various functional nervous affections. Turning from theory to fact, would not some general discussion which would bring individual experience to a focus aid greatly in prognosis and therapeutics? It was only by mutual co-operation that the Society could be made of the greatest service, and it was with the hope that some such plan could be carried out that the speaker urged it.

The detailed histories of the three cases of angioneurotic œdema were then read.

CASE I.—Female, twenty-eight years of age, with good family and personal history. She could assign no cause for the peculiar disease from which she had suffered at intervals for two years. The symptoms consisted of a stiffness, burning and swelling of the right side of the face whenever the patient exposed herself to cold. It came on sometimes spontaneously without any exciting cause. To the touch the swollen part was perceptibly harder than normal. This condition might pass off in a few hours, but had lasted three or four days. As far as discoverable the condition bore no relation with the patient's general health, indigestion or menstruation. When she first presented for examination, the right half of the face was swollen, the surface of the forehead was elevated, the tissues about the eye, and eyelids, and soft parts beneath the eye, were swollen and stiff, and so tense that the eye could not be opened as readily as the other. The cheek was perceptibly rounded and fuller than the other and the chin shared in the swelling. The neck was not involved. The swollen surface was cold and had whitish yellow tint. An application of heat for a few minutes had no perceptible effect. The face had an appearance of œdema, but did not pit on pressure. It resembled most exactly the condition seen in myxœdema. Under massage the condition subsided in a few hours. This treatment was kept up daily for two months. There had been no return of the trouble.

CASE II.—Female, aged thirty-seven years, was subjected to severe emotional strain for several months before the present illness. The first symptom noticed was a swelling of the hands whenever they were placed in cold water. When winter came on this swelling was noticed in other parts of the body. Examination showed a well-nourished woman with no physical signs of disease. Her face was swollen in the lower part of both cheeks, was hard to the touch, did not pit on pressure, and waxy in appearance. The left hand was subjected to experiment. It was found that by holding the hand in cold water for one minute, swelling, distension of the veins, and increase of the temperature of the part took place, It was quite twenty-five minutes after removal before the parts returned to the previous condition. It was stated that the nails grew more rapidly now than formerly. Various kinds of treatment had been ineffectual and the patient still suffered from these symptoms in cold weather.

CASE III.—Female, aged fifty-four years. The patient was a healthy woman with good history. The present condition began at Christmas, 1891, without known cause. The fingers and thumb of the left hand, the hand itself escaping, were found swollen, dark blue in color, hard to the touch, stiff in movement, and, after exposure to cold, painful. There was no anæsthesia to touch, temperature or pain, but cold was felt colder on the affected fingers. The œdema could be slightly reduced by manipulation, but not permanently. The electrical resistance was carefully measured. but was equal on both sides. There was no atheroma of the radial or other arteries. Massage was recommended.

The essential features of the disease were as follows: A swelling of the tissues affected, of an œdematous kind, with a change in their color, temperature and feel, usually without, but occasionally with, a disturbance in the sensation of the part, and an interference with the function of the parts, due to the stiffness and swelling. The swelling was usually transient, came and went rapidly after exposure to cold, but might remain permanently. It appeared to be of the nature of œdema of the corium itself rather than of the sub-dural connective tissue. The color of the part affected was usually red, but was sometimes whitish-yellow. The temperature was generally lower than on the unaffected part. The sensations felt by the patient were those of stiffness, burning, numbness, or pain, and the discomfort produced by the exposure to cold. Any part of the body might be affected by the œdema, but the hands, feet and the face were the parts most often affected. The duration of the attacks varied from a few hours to a few days. In the majority there was a complete cessation of the symptoms between the attacks. As to the nature or pathology of the disease nothing was known. Various remedies had been tried in its treatment, but none were of much avail.

OBSERVATIONS ON THE EXCRETION OF URIC ACID.

Dr. C. A. HERTER read a paper on this subject. The paper was based on an extended series of original observations upon uric acid in health and disease. The subject was treated under the following heads:

(1) The methods used in determining uric acid and urea. (2) The variations in total uric acid excretion under the influence of diet, exercise, etc. (3) The variation in total urea excretion under the influence of diet, exercise, etc. (4) The quantitative relation of uric acid and urea in health. (5) The excretion of uric acid as influenced by drugs. (6) The excretion of uric acid in disease.

It was shown (1) that the absolute quantity of uric acid excreted varied chiefly with the character of the diet, being high on a highly nitrogenous diet, and low on a diet of carbohydrates chiefly. In health the quantity of urea excreated, varied roughly with the quantity of nitrogenous food ingested. Hence, in health, both uric acid and urea might vary widely with the quantity and quality of the food. (2) That the chief clinical criterion as to whether uric acid excretion was normal, was not the absolute amount of uric acid excreted, but the ratio of the uric acid to the urea excreted. (3) That the ratio of uric acid to urea in the twenty-four hours urine of the same individual in health, was remarkably constant. (3) That this ratio in different adult individuals in health varied from $\frac{1}{45}$ to $\frac{1}{65}$.

The much-quoted views of Dr. Haig as to the relation of uric acid to disease, were criticised at some length and were shown to rest upon insufficient evidence. The relation of uric acid excretion to chorea, migraine, neurasthenia, epilepsy and paroxysmal vomiting was discussed. The general view was maintained that there was evidence to show that uric acid was not the cause of disease, but rather its effect. Excessive uric acid excretion was found in a variety of different clinical conditions, and was to be regarded as the result of different initial morbid nutritive processes.

The most important practical feature of the paper was the establishment of the fact that each individual in health, and on a mixed diet, preserved a ratio between the uric acid excreted and the urea, which showed only slight variations. In any case where this ratio was disturbed, the degree of divergence from the normal afforded a criterion of the severity of the nutritive disorder. Moreover, this knowledge gave us a reliable and scientific indication as to prognosis and the effect of treatment. A neurasthenic, for instance, who had a ratio of 1 x 30, and showed no improvement in this ratio from week to week, was not improving. But if he showed a steady change in the ratio toward the normal, we knew that he was improving, no matter what the symptoms might be at the time. We had in this ratio a far more accurate index of the patient's actual condition and progress than any that had heretofore been at our command.

Dr. L. C. GRAY said that the one fact of value elicited by Dr. Herter was the relation of uric acid to disease, but he thought that one of the drawbacks to this knowledge being of practical utility, was, that we were not by any means positive as to the normal standard of the ratio. He could not say that he had observed the same action from a nitrogenous diet as had the writer of the paper. Dr. Herter had not classified neurasthenia, but the speaker thought that the ratio in the uric acid excretion would be very different in cases of lithæmic neurasthenia.

Dr. B. SACHS thought that the paper could be used as a guide upon which to work up further facts in regard to this question of uric acid excretion in health and disease. He was satisfied that in treating a number of cases, the uric acid had been reduced by a non-nitrogenous diet and plenty of fluids.

Dr. A. D. ROCKWELL said in regard to neurasthenia, that the uric acid might or might not signify; that it was a difficult matter to say whether the disease was one of the digestive organs or a neurosis.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Stated Meeting, April 25, 1892.

Dr. CHARLES K. MILLS, in the Chair.

Dr. JOHN K. MITCHELL and Dr. G. E. DE SCHWEINITZ presented a paper entitled

"SOME CASES OF HYSTERIA WITH A STUDY OF THE DISTURBANCES OF GENERAL AND SPECIAL SENSATION."

They drew the following conclusions:

1. Achromatopsia, as we have already stated in a paper entitled, "Hysterical Anæsthesia with a Study of the Fields of Vision" (The American Journal of the Medical Sciences, November, 1889) apparently is not present in the American cases, certainly not as it has been described by Galezowski and other French observers.

2. Reversal of the normal sequence of the colors, so that red is the largest field, usually is present when there is anæsthesia; but disturbance of the color-sense and anæsthesia do not necessarily belong to each other, because we have examined at least two cases of universal anæsthesia without change in the color fields.

3. The green field, relatively at least, is more often and more decidedly contracted than the other color fields.

4. In the difficult distinction between certain types of neurasthenia and hysteria, the presence of disturbance in the color-sense, and especially the reversal of the sequence of the colors, is of diagnostic import, and yct its absence is of little meaning, because we have not found it in many typical cases of hysteria.

5. It is possible that in the rare cases of hysterical hemi-hyperæsthesia it will be found that the colors are more acutely appreciated than is normal, and that the color fields are correspondingly enlarged.

6. The violence of hysterical manifestations bears no relation to the disturbance of the color-sense or the color fields.

7. The following changes, so far as the field of vision is concerned, are likely to be present in cases of hysteria:

(a) Simple contraction of the color fields with unaffected form fields.

(b) Contraction of both form and color fields, the green field being relatively more contracted than the other color fields.

(c) Partial or complete reversal of the normal sequence in which the colors are appreciated, most commonly that variety in which the red field is greater in extent than the other fields. Under these circumstances the color fields may be normal in extent, sometimes even greater than is normal, or there may be an associated contraction of the color fields.

(d) Unusual obscurations of portions of the fields of vision, for example, in the form of a hemianopsia, or greater contraction of the fields on one side than on the other, the greater contraction usually being found on the same side with the anæsthesia.

8. A further study in the relation of the changes of sensibility to changes in the color fields will be the subject of a future communication.

DISCUSSION.

Dr. JOHN K. MITCHELL.—It perhaps may be worth while to mention that in the most pronounced cases of hysteria reported here, there is no alteration of the visual fields with the exception of some slight contraction. This is the girl from Pottsville who first came under observation in 1883 with a hysterical knee, and subsequently went into a trance state which continued for four months. This case has continued nearly ten years, and during this time she has not been free from hysterical manifestations, and yet there is little change in the fields of vision.

Dr. JOSEPH LEIDY, JR.—I would ask whether these variations in the ocular fields are found during the course of other diseases which do not present gross retinal changes. The members may have seen in the International Clinics the report of a case of malarial paralysis which was in the Pennsylvania Hospital under the care of Dr. Da Costa. That man presented during the treatment hemianopsia of the bi-temporal variety. The condition was so unusual that the patient was of course carefully examined. The malarial organisms of Laveran were found in the blood. Under treatment with quinine the hemianopsia disappeared nari passu with the disappearance of the malarial changes. In taking that man's fields for color, I found that the red was much the largest. It may be that this was a case of hysterical hemianopsia, for the fundus presented nothing abnormal which suggested organic disease.

Dr. GUY HINSDALE.—I would ask Dr. de Schweinitz whether or not from his studies in hysterical ophthalmoscopy, he can state what percentage of hysterical cases will show this reversal of the red and green fields?

Dr. DE SCHWEINITZ.—In reply to Dr. Leidy I would say that the changes which are found in the fields of vision in hysterical patients are often similar to those which occur with organic disease, just as in other respects hysteria in its various manifestations, mimics the symptoms of constitutional maladies. In all forms of optic nerve atrophy, and in various diseases with insufficiency of retinal perception, there are changes both in the form and color fields, usually in the form of concentric contraction. In optic nerve atrophy the perception of red and green is the first to be lost—generally green first, and then red. If the observations reported to-night are to be taken as samples of those which occur in general in hysteria, the reverse is true, so far as red is concerned, because it is probably the last of the colors to lose its power to make an impression, although green, as has been pointed out, relatively at least, presents the most contracted field. The mere crossing of the color lines would not be a safe symptom on which to base a diagnosis of hysteria. It is also seen in various forms of optic nerve atrophy, and sometimes in normal individuals. No doubt charts like these might be obtained as the result of imperfect examination. When, however, the eye-grounds being normal there is an absence of symptoms pointing to organic disease, and there is a persistent reversal in the normal sequence in which the colors are appreciated, so that the red field is larger than the blue field, and this condition obtains after repeated examinations, it is a circumstance very suggestive of hysteria. Certainly, if we may judge from one or two of our cases, its presence is of diagnostic import, even if, as we carefully point out in our conclusions, its absence is of little moment, because we have not been able to find it in many typical cases of hysteria. In a given case of hysteria one cannot foretell what the color field will be, any more than it is possible to prophesy what will be the next hysterical manifestation. In two of the most violent cases which we have described, one lasting ten years and another of violent convulsive type, probably implanted upon an organic lesion, the changes in the color fields were the least marked of any of these reported. In regard to Dr. Leidy's case of hemianopsia, I would say that there have been reported a few cases of bi-temporal hemianopsia due to malaria; one by Drs. Harlan and Leidy, and another by a German observer. No doubt malaria is capable of producing hemianopsia. The fact, however, that the red field in Dr. Leidy's case occupied the greatest extent, seems to me to be a suspicious sign, although I can see no reason why there might not be a combination of malaria and hysteria. We have not found a single case of true achromatopsia, as has been recorded in France, provided we omit certain cases of ordinary hysterical amblyopia, which are not uncommon; but in other respects our observations are closely in accord with those which have been made in Charcot's wards in Paris. I am unable to answer Dr. Hinsdale's question in reference to the percentage of cases in which these changes are found, for the simple reason, as has before been pointed out, that it is impossible to predict what relation the hysterical manifestation will have to the character of the color field and the sequence in which the colors are appreciated.

Adjourned.

Book Reviews.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE FOR THE USE OF STUDENTS AND PRACTITIONERS. By R. C. M. Page, M.D., New York. One volume, post octavo, 568 pages and 48 illustrations.

The object in preparing this book has been to facilitate clinical instruction, enabling the physician and student to obtain in brief the most practical and scientific view of the various subjects treated in a work on medicine. Medical students and those taking a supplementary clinical course, as well as active physicians, often find they have not the time to sift out desired information from extensive treatises; and while Dr. Page regards such books valuable as monuments of research, he believes there is need of a Practice in a more concise form. The chapters devoted to the Heart, Blood-Vessels, and Organs of Respiration naturally receive a relatively fair amount of attention, all the essentials being set forth in an admirable manner. The study of the physical diagnosis of these organs, which is treated at some considerable length, is very materially aided by clear woodcuts. With the exceptions of those portions devoted to the more common and important diseases, the remainder of the work is very much condensed, but in a manner showing the writer's good judgment for retaining what is most necessary. He does not fail to refer to la grippe, but devotes a brief article to this malady, which accords with our present knowledge of the subject. The chapter on the Nervous System is necessarily short, mention, however, being made of all the principal diseases. Before referring to the diseases of the brain, a summary of symptoms is briefly given by which the lesions on which they respectively depend may be localized according to the most recent investigations. Only the chief points in pathological anatomy are given throughout the book, but the subject of treatment is gone into more fully, and for the most part may be considered up to date. Not only are drugs mentioned, but their doses and numerous prescriptions are added. Several points in therapeutics, new to many, will be found. For example, the case is mentioned of a patient who had suffered with chronic intestinal catarrh, having four to six liquid stools daily. The usual treatment failed to cure him, but he got well when, by the advice of the late Dr. Alonzo Clark, cod-liver oil was administered. Dr. Clark informed the author that it was his custom to order a fatty diet for such cases.

Speaking of senile bronchitis, he says that one of the best remedies is the muriate of ammonia in the infusion of gentian. This he learned from the late Dr. C. R. Agnew, with whom he had in consultation the case of an elderly lady for deafness, due to coughing. In six weeks the cough lessened and the hearing improved. These and other similar hints on treatment are among the striking features of the book. In concluding the subject of diseases of the liver, a short description is given of the alkaline, saline, mineral waters, with a sketch of the treatment at some of the famous watering-places. The whole work appears to be admirably adapted for the advanced student or physician wishing to briefly review medicine. The index is sufficiently complete, and thirty-two blank pages are added at the back of the book for memoranda.

DISEASES OF THE NERVOUS SYSTEM. By Jerome K. Bauduy, M.D., LL.D., Professor of Diseases of the Mind and Nervous System in the Missouri Medical College, etc. J. B. Lippincott & Co., Philadelphia.

Like the policeman in the "Pirates of Penzance," the critic's life is not a happy one when book reviewing is to be done. When a book is deservedly bad it is right that the feelings of the author be not lacerated more than is absolutely necessary, and still it is a duty owing to those readers who are guided by the reviewer's discrimination as to what books they shall invest in, to state truthfully and candidly the merits of the volume in question.

The book with the above title has very little to commend it, although it makes such pretensions. In the first place the volume is styled "Diseases of the Nervous System," which would imply that it made some pretension of being at least moderately exhaustive, whereas as a matter of fact it discusses but three or four diseases that are commonly included under such a heading, and the larger part of these chapters is taken up with the discussion of a subject, concerning the existence of which there is more than a reasonable doubt, namely, cerebral anæmia and hyperæmia. The author has very much to say on this subject, but we must confess that most of the ideas were familiar from other readings, tinctured somewhat by the personality of the one who is making use of them. The first chapter is copied bodily from Van der Kolk, and throughout the entire book the author gives evidence of having used the material statements of many other writers extensively. Of course, in this way is shown his familiarity with the best literature and advanced writers of the present, but in this case there is too much evidence that this knowledge is taken directly from these writers and not after it has undergone a process of refinement and adaptation in the mind of the utilizer. Of course, it is apparent to every one that at the present day, in view of the vast amount of literature that is continually being put upon the market by members of our profession, little can be said that is absolutely new, and necessarily the opinion of others must be rehashed and remodelled, and associated with new personal ideas and discoveries. And he who does such conscientious critical labor in the shape of collating others' opinions and sifts them down into tangible and utilizable shape is doing a commendable work. But when one deliberately takes some prévious writer's opinion and fortifies or commends it by another's and then uses it as his own, he is doing more harm than good to the advancement of science.

Space does not permit us to enter into details concerning the shortcomings of this book, but we may be permitted to quote a few sentences at random. Take, for instance, an example of the physiology given: "In order to fully understand the manner in which paralysis of the vaso-motor nerves causes hyperæmia, we must first consider the functions of these nerves, the neuro-physiology of the vessels to which they are distributed, and the presiding influence exerted by these nerves over their proper innervation. The blood-vessels are furnished with a certain elastic coat, which, by alternate expansion and contraction regulates the flow, and, consequently, the supply, of blood to certain parts. As the stimulus to the organs of the body is derived from nervous centres, and conducted by nerves, it follows that this contractile coat must be supplied by a nerve, which in this case is derived from the great sympathetic, from which all vaso-motor nerves emanate." Now, without saying anything of the obscurity of diction in the first part of this extract, it is not possible to allow the statements in the latter part to pass as representing our knowledge of the vaso-motors on the blood-vessels. In the first place, the elastic coat does not regulate the flow, and, consequently, the supply of blood to certain parts. And by no means are the vaso-motor nerves distributed to the elastic coat, they are distributed to the muscular coat mainly, and this has its most important function in regulating the calibre of the vessel. It has, I think, always been taught by physiologists that the function of the elastic coat was to cause a return of the blood-vessel to its proper calibre after it had been dilated, and the elasticity, as its very name would indicate, has little to do farther than this. But this is merely an example of the slip-shod way that many physiological and anatomical questions are dealt with by the author. It may also be pleasing to some of the advocates of the existence of passive hyperæmia of the brain to know that the surest way of producing it is by hanging, whether by the neck or not "until dead" is not mentioned; but as hanging, or treating people who have been hung, is not in our line, we need not concern ourselves with this.

In some parts the writer really reaches a height in his rhetorical fancies which must be very impressive and fetching to the ordinary second-year-medical student, and as such may be commended. For instance, in speaking of the treatment of hydrocephaloid disease in children, he says: "Forewarned, you should be forearmed; and it will henceforth be inexcusable in you to commit such a blunder as to treat such a case by 'spoilative' (*sic.*) measures. Resist all temptation to be misled by the threatening aspect of the initiatory symptoms, so deceptive as to compel you to select therapeutic measures which would inevitably result fatally, consigning to a premature grave the little sufferer committed to your care; which catastrophy instead of being averted would be precipitated by an ignorance as unpardonable as unjustifiable." This reminds us of an old saying of Bruyere's, that little things need great emphasis and assertion, and things really important are sufficiently emphasised by their mere mention.

The larger portion of the book is taken up with the discussion of some forms of insanity, and we are rather inclined to believe from a word said in the preface, that the author sandwiched this talk on insanity in here with the idea of putting more real nervous diseases in another volume, although there is nothing about the book to indicate that this is Vol. I., or that another is to follow. At the present day when a man offers a new work to the professional world he generally takes the pains to inform his readers of the factors which led up to the writing of his work and the reasons why it should demand our attention. He surely owes his reader that amount of consideration, if the reader flatteringly reciprocates by purchasing his volume, but Dr. Bauduy has not taken the trouble to speak of this matter, but perhaps "the students of his successive classes have demanded of him some such volume as the present, and he has complied." And although no one will question the author's ability to write a book worthy of his profound knowledge and reputation, and such a substantial contribution that will demand respect from the profession of other countries than his own, we must conclude by saying that the present volume does not fulfill that desideratum nor can it be recommended. JOSEPH COLLINS.

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AUGUST, 1892.

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Note Relative to the Buffalo Lithia Water

WILLIAM A. HAMMOND, M.D., Washington, D. C.

Surgeon-General U. S. Army (retired), formerly Professor of Diseases of the Mind and Nervous Syste
University of New York, etc.

There is a point in relation to the therapeutical efficacy of the Buffalo Lithia which has not as yet, I think, received sufficient attention. It is well known that many of diseases of the nervous system are complicated with lithæmia, and that unless this con is removed a cure is very often retarded and not infrequently entirely prevented. It is commonly the case that in cerebral congestion producing insomnia, nervous prostration r ing from over-mental work or much emotional disturbance, and in epilepsy (to say nothi many cases of insanity) an excess of uric acid in the blood is often observed. This appears to be altogether independent of the character of the food, for no matter how ca the physician may be in regard to the diet of his patient the lithæmic condition continue have tried to overcome this persistence by the use of phosphate of ammonia and other so-c solvents for uric acid, but without notable effect.

Several years ago, however, I began to treat such cases with Buffalo Lithia Water, a result that was as astonishing to me as it was beneficial to the patient,so that now in all of nervous diseases under my charge, in which there is an excess of uric acid in the blo use the Buffalo Lithia Water in large quantities. By this I mean that I do not have the pa drink merely a tumbler or two in the course of the day, but that I flood him, so to speak, the water, making him drink a gallon or even more, in the twenty-four hours. By this co the urine after a few days ceases to deposit uric acid crystals on standing, the morbid i bility of the patient disappears, the tongue becomes clean, the wandering pains in the are abolished, and the system is rendered much more amenable to the special treatment w may be necessary for the cure of the disease from which the patient suffers.

I have tried carbonate of lithia dissolved in water in various proportions, but it certa does not, in cases to which I refer, have the same effect as Buffalo Lithia Water.

WASHINGTON, D. C., January 25, 1892.

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Original Articles.

ON THE REFLEX THEORY IN NERVOUS DISEASE.[1]

By L. BREMER, M.D.,
St. Louis, Mo.

THE subdivision of practical medicine into a great number of specialties has not proved an unmixed boon to either science or the welfare of humanity. If one peruses the reports of the specialists and becomes familiar with the trend of their work, one is struck with the peculiar antagonism that exists among the respective representatives or followers of the several special branches. The chief interest of their reports generally centres in the observation that by successfully treating a disease of the organ to which *they* pay special attention, symptoms in distant organs, which other specialists claim as their domain, have vanished; the additional remark being generally made that the patient had been treated by such and such a specialist of another order without any benefit.

A few such results, misconceived as a rule, as to their true nature and import, will render the young specialist enthusiastic; from an enthusiast he is apt to develop into a fanatic, who builds dogmas on misunderstood facts.

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[1] Read before the Neurological Section of the American Medical Association, Detroit, June, 1892.

One of the chief causes of these aberrations from the true intents and purposes of practical medicine is to be found in the erroneous conception and interpretation of reflex action in disease.

Ever since the custom became prevalent among physicians, especially those practicing specialties, to look upon localized lesions as the causes of disorder in distant organs, the theory of the reflex origin of disease took a firm hold of the professional mind, to the benefit of our science and patients in many, to the detriment of both in many more instances.

By misuse of the term, and its misapplication to practice, evil results have in the course of time by far outclassed the positive good it might have wrought within proper and legitimate boundaries.

The introduction of the term "Reflex" in medicine dates back to the works of Descartes, who first applied it to the involuntary closing of the lids which takes place when an object is approached to the eye. The doctrine of the reflexes was later on enlarged and elaborated by Marshall Hall, Grainger, Johannes Müller, *et al.* The essence of this law is, as is well known, the response by muscular contraction of certain parts on the application of a stimulus to ascertain sensory or sensorial nerves. The irritation, then, is reflected as a *movement in a corresponding muscular area*, and motion is essential as a result of indirect stimulation.

The physiological experiment gave a clew to the understanding of many formerly inexplainable morbid phenomena; spasmodic affections and other motor disturbances could be traced to certain local irritations, and were in many instances relieved or cured after such local troubles had been remedied.

But when the profession split up into specialties which subsequently spread and developed to present proportions, the theory of reflex action in disease was soon called to aid in the explanation of morbid conditions, which had absolutely nothing to do with that law.

The fact was lost to sight that a true reflex presupposes a *reflex arc* composed of an *afferent* nerve, a *central* nerve cell, and an *efferent* nerve. By ignoring the proper definition of reflex action great confusion was created by mixing up "Associated Sensations," or what I would like to call, for brevity's sake, "Co-sensation" (Mitempfindung) with reflexes. Thus quite a voluminous literature of "Reflex Neuroses" sprang up, treating of local or general, sensory or sensorial, even mental affections, caused, as alleged, by local maladies.

This mistake has had a peculiarly disastrous effect on gynecology. Five years ago I read an article on this subject before the St. Louis Medical Society, published in the *Weekly Medical Review*, 1887, p. 8, under the head "Gynecology in Neuroses and Psychoses."

The remarks on this matter made at that time were based upon observations in private and hospital practice (St. Vincent's Institution for the Insane, St. Louis). Abridged and slightly modified, they are about as follows:

Without denying the possibility of nervous and even mental derangement arising in women from comparatively trivial diseased conditions of the general organs, such as catarrh, cervical laceration or stenosis, uterine displacements or ovarian disorder, I agree with those who believe that the frequency of such cases are vastly overestimated, and that the prevailing practice of treating slight local affections with a view of bettering or curing such morbid conditions as hysteria, neurasthenia and allied diseases of the nervous system, are generally nugatory and injurious.

These injurious results of local treatment consist in aggravating the nervous symptoms and creating a state of chronic invalidism, the prevailing condition among the women of the better classes in our days, the cures, if they do take place, being generally ascribable to other factors, principally suggestion. In many instances such alleged cures are apparent rather than real. There are women who claim that they are benefited by every local application, and frequent the physician's consulting room, year in and year out.

Gynecological treatment has a corrupting and debasing influence on some neuropathic and psychopathic females, who develop a craving for local appliances and manipulations, a speculo-mania, so to speak, frittering away their time in the doctor's office, which they have not to spare, and which they ought to devote to their homes and children. From this neglect of the household duties, domestic infelicity and subsequent divorces are apt to result. The remote causes of the latter are in not a few instances traceable to the gynecological chair. A woman who meets with disappointment in married life is nowadays inclined to seek relief in the gynecologist's office, as she would formerly apply under like condition to her spiritual adviser. All her thinking becomes concentrated on her womb, her egotism (generally hysterical) assumes immense proportions, she poses as a martyr to imaginary or quasi-imaginary disease, or in the worst cases worships her doctor as her hero and benefactor.

Meanwhile the continued doctor's bills are far from having a soothing influence on the mind of the disgusted husband, who sees through this farce and conceives an inextinguishable loathing for his wife. The finale of the drama is enacted in the courts under the designation of cruelty, neglect and incompatibility of temper.

Another significant fact is that married female morphinists are almost invariably patrons of the gynecologist's office at one time or another in their career, and that they are willing to, and often do, undergo all kinds of surgical operations on the womb and its appendages, operations which generally, to say the least, are superfluous. This craving for surgical interference about the genital sphere, sometimes painful and dangerous in character, may seem incomprehensible and even incredible to some, but it is a fact familiar to those who have had opportunities to observe or treat this class of drug-victims. The medical history of such patients generally contains a passage which runs like this: The operation was successfully performed and the local trouble is cured, *only* "a little nervousness," in the language of the operator, remains. This small amount of persisting nervousness was, however, sufficient to land the patient at some sanitarium.

Specially harmful and uncompromisingly to be condemned are gynecological examinations and treatment for minor ailments in young unmarried women, who, following the fashion of the day, and having their heads full of misunderstood physiological notions, apply to the doctor for local treatment, or, still worse, are persuaded into it against their will by weak-minded and fanatical women whose special object in life seems to be to hunt up victims for "local treatment," as it is termed, *par excellence.*

Without hesitation I go the length of saying that gynecological treatment under such circumstances is a crime, that its effect upon the mind of the young woman is that of defloration. Her moral tone, her manner of judging things is altered and lowered; with the consciousness of there being even the shadow of a flaw on her virginity, those subtle qualities disappear which constitute the charm of girlish innocence; her mind is polluted, she is unfit for marriage, and all this because her doctor happens to hold the opinion that by manipulating the uterus he can cure neuroses. It is the bounden duty of the rightly thinking physician to shame such patients out of gynecological treatment and to help, but so doing, to restore them to health, reason and decency.

But the greatest mistake founded on the reflex delusion, and a very prevalent one at that, is gynecology in mental diseases. Having been connected with an institution for the insane for a number of years, I have had ample opportunity of watching the results of such uterine manipulations. There is scarcely a female between twenty and forty-five admitted to the asylum that has not been treated for womb disease as the probable cause of insanity, and in case this has not been done, the attack coming on too suddenly, the suggestion is made by the friends or relatives that womb-disorder is probably at the bottom of the mental trouble. Somehow it is a consoling thought to relatives of insane women to shift the blame from the brain to the womb and ovaries, especially where the cloud of heredity hangs over the family, and the doctor who pronounces the case "mere nervousness" dependent on womb-disease is pretty sure, for a time at least, to meet with approval on the part of the female members of the family, and in case the patient, after a protracted local treatment is committed to the insane asylum, everybody is satisfied that everything that could be done has been done, whereas in reality everything was done to intensify the trouble and render a cure, if not impossible, at all events highly improbable. It is a maxim in psychiatry, even more so than in general medicine, that the more recent a case presenting itself for treatment, especially institution treatment, the better the chances of recovery. These chances are impaired and sometimes destroyed by the worse than useless gynecological procedures. I say worse than useless, because in many instances they do positive harm. In the predisposed they precipitate the mental catalysm, they kindle the flame of insanity that was slumbering beneath the embers, they confirm and fix morbid thoughts in grooves that cannot be smoothed out and turn them into channels that refuse to be dammed up.

I know of patients who were thus treated for apparently curable melancholia at home until mania supervened, and others whose delusions were fostered and deepened by local treatment; syphilophobia, imagined pregnancy or fancied destruction of the womb being the result. Frequently the doctor's personality enters into the delusions of such cases, an occurrence which gives rise to very annoying, unpleasant and easily misinterpreted situations.

In the same article I alluded to the unscientific and barbarous practice of spaying women for nervous disorders, having apparently their starting-point in the ovaries.

Much has been said and written on this topic before I read that article, and much has been said and written against the practice since by neurologists. Although there has been a healthy reaction in some quarters owing to the greater spread among physicians of neurological knowledge, the evil is, I believe, even greater to-day than it was five years ago. While at the medical centres the truth has at last dawned upon those who specially treat women's diseases, and while it has been solemnly stated that women have other organs than wombs and ovaries that may be at fault and need looking after, and whilst there is a laudable attempt in those quarters to *unlearn* certain things in gynecology, as it has been put, the seed of the evil has been sown too long and too thickly, as to be hampered in its spread and growth by some isolated anathemata that may occasionally be hurled against the abuse by a few authorities. Too many useless gynecological operations have been witnessed and admired by the present generation of physicians, and their minds have been too powerfully impressed *ex cathedra*, for more than two decades, with the alleged beneficial results of gynecological procedures, to make room for the hope of any amelioration in the near future. The mind of the general practitioner is chronically infected with the delusions taught for years by books and in the colleges and the speculomania among women prevails epidemically, having spread from the cities, its former exclusive seat, to the country population. It is a hopeful sign, however, that advanced and enlightened gynecologists are of late moving in the right direction.

What has been said of gynecological practice as being to a very considerable extent based on delusions, holds also true, though not nearly to the same extent, in the specialty of genito-urinary diseases in men. The well-known chains of nervous symptoms attending diseases of the bladder, prostrate and kidneys in neurotic men have also, in many quarters given rise to the idea that such local conditions caused the nervous disorders reflexly. Aside from the fact that at best only motor disturbances, such as spasms of voluntary and involuntary muscles (vessels, intestines, etc.) could be called reflex, many of the nervous manifestations are co-sensory, whilst the most of them (at any rate their persistence) are the result, but not the cause of them.

Mistaken notions about the reflex action have in this particular field of medicine, too, wrought an immense amount of harm, and the modern nuisance of illegitimate orificial surgery is one of the parasitic growths that luxuriates on, and at the expense of, legitimate genito-urinary surgery.

The irritable bladder, the irritable urethra, prostate, rectum, or perineum, with distant associated nerve-complication affections which do not call for operative interference any more than the irritable breast or the irritable heart, have all more or less unnecessarily been tampered with from ignorance of the fundamental teachings of neurology. Causes of functional central and coarse systematic nerve disease (tabes, *e.g.*), that were locally treated as vesical or rectal affections, abound in the personal recollection of neurologists, and all these improper practices were done on the reflex theory.

Another phase in the evolution of the theory of, and practice on the law of reflex action, illustrating the blending of reality and imagination, truth and fiction, is the relation of ocular defects with certain neuroses. Since it became known that visual abnormalities often accompanied nervous diseases, oculists tried to establish a causal connection between the eye affections and neuroses, the same as gynecologists, aurists, rhinologists, dentists, etc., did before the reflex theory gained here a new field for application.

The startling statements of the remarkable results obtained in the treatment of chorea, epilepsy, and hystero-epilepsy and neuroses in general by the mere correction of ocular defects called forth the famous inquiry of the

Stevens' Commission. The investigation ended, as might have been foreseen, like a regular doctor's quarrel, or a theologian's dispute, each side being more confirmed than ever in the correctness of their respective positions. In perusing the history of this "Stevens' Commission" there is one point that strikes one more forcibly than any other: the patience and perseverance of both patient and oculist. Month after month elapsed without any material benefit being appreciable in the patients' condition, and yet they continued to present themselves with regularity and endurance worthy of a better cause. The tenacity of such confiding sufferers finds its amalogon only in gynecological patients and in persons afflicted with chronic catarrh of the middle ear. They are specially hopeful and continue treatment to the last.

As with the latter class the enthusiastic physician who treats them is in the enviable and impregnable position of the Indian medicine-man who prophesies rain until it finally does rain. The remissions and intermissions in all functional nervous diseases, and for that matter, those due to organic trouble also, are powerful allies of the doctor who has the knack of holding nervous cases by performing small and insignificant operations on them, however indifferent they may be.

There is an old and undisputed maxim: "The World wants to see Performers." This is especially the case in the neurotic world. Nothing, however, produced such an overwhelming and occasionally such a beneficial effect on the fertile, though morbid imagination of the sufferer from nervous disease, as an instrument of precision and its application. The nerve crank will swear by the oculist's "phorometer" as he will testify to the wonderful effects of magnetic water. He will continue to have his eye muscles clipped by the oculistic impostor and marvel at the great advances which have been made in medicine.

I know of cases of incipient insanity that were treated by such muscle clipping, it is needless to say with what result.

Certainly the aid of scientific and conscientious ophthalmologists to neurology and to internal medicine generally, has been of the greatest advantage, and has established many valuable points touching the relation between eye and brain, and this knowledge has benefited many sufferers who, without this aid, would have continued in chronic martyrdom. I myself bear cheerful testimony to the prompt relief of some functional nerve disturbances following the use of properly selected glasses, and other rationally directed ophthalmological treatment; my protest is aimed at the ocular "Reflex" humbug that started in New York and bids fair to imbue the profession with the same erroneous and harmful ideas as have obtained in other specialties.

A great stir in the medical world was created when Hack announced, in 1882, that he had cured a great number and variety of neuroses by cauterizing diseased portions of the nasal mucous membrane, removing small polyps and relieving catarrhal conditions generally. The firmness and precision of his reports gave a great impetus to the study and treatment of nervous affection, having their supposed origin in diseased conditions of the upper air-passages. More and more the nose, throat and larynx were explored for the *causa nocens* in nerve diseases, and soon there was a galaxy of brilliant reports adorning laryngological literature, dazzling and perplexing to the unsophisticated observer.

In Hack's report and still more in those of his followers, real reflex affections, such as asthma, continued sneezing, spasms of the glottis and coughing, were again mixed up with associated neuroses, neuralgias and headaches, *e. g.* After the enthusiasm has subsided a little, and especially after the electric search-light of neurological inquiry had been turned on a number of these marvelous cures, it became evident that many of the successes were only temporary, and that spastic seizures and sensory disturbances would return after shorter or longer abeyance, in spite of the removal of the local affections.

Like in other therapeutical booms, together with the unavoidable reaction, cases are now being reported where grave and permanent neuroses have resulted from cautery of the upper air-passages, and truly progressive specialists have begun to realize that back of the local disease there is often a central neurosis which refuses to be favorably influenced by local treatment, but yields, together with the peripheral disease, to a rational general plan of treatment. There are, however, too many left yet who believe that catarrh is the root of nearly all human evils, who imagine that nearly all morbid, nervous conditions are caused reflexly from the nose, and who even believe that they can cure hysteria and insanity by local means.

While it is perfectly right and proper, and simply a matter of course, to eliminate any peripheral irritations which naturally tend to intensify existing nervous derangements, it must be remembered that back of the unimportant peripheral there is an all-important central disorder, and that local means are of no avail when central ones are overlooked.

It would be needless to dilate upon the mis- and abuses of the reflex theory in aural, dental, and other local diseases. Here, as elsewhere, reflex troubles are met with, but not to the same degree as is claimed by many. Some dentists, especially, do a great deal of damage to patients afflicted with facial neuralgia, because they labor under the mistaken idea that all such affections start from the teeth. By the jarring attending operations on teeth they often aggravate the trouble. The pulling of sound teeth for the relief of pain, a procedure which even in our days is not unfrequently resorted to, cannot be too strongly and unqualifiedly condemned.

I cannot refrain from devoting a few words to another delusion which has taken a firm hold upon the profession and which relates to the rôle that an abnormal condition of the prepuce and clitoris is believed to play in certain nervous affections of children.

Reflex epilepsies and reflex paralyses have been indiscriminately and recklessly attributed to such abnormal, often excessively trivial conditions. The reports of the speedy relief and cure of seemingly hopeless maladies in children, published in the beginning of the seventies, read like tales of one thousand and one nights. A simple operation on the preputium or the clitoris, especially circumcision in boys, and the removal of a ring of hard and inspissated smegma from the fossa glandis penis, was said to have changed cripples into healthy individuals.

While I was perusing these reports one peculiarly struck me very forcibly; it was the absence of neurological criticism, and the prevalence of letters written by exulting mothers who bore testimony to the wonderful change wrought by the operation, but who in their writings displayed an unmistakable hysterical temperament. What this means, both as to the reliability of such testimony, and the character of the disease in their offspring, I need not dwell upon at this time and place. Of late the miraculous reports have not been so frequent, although the delusion is still prevalent, that nervous disorders are caused instead of simply aggravated by preputial or clitoridian abnormalities. Again, in order not to be misunderstood, I emphasize that peripheral disease here, as elsewhere, ought to be treated, because in a certain percentage of cases (not in all, by any means!) they give rise to co-sensory and reflex disorders, possibly even reflex-paralysis; I protest against indiscriminate and senseless generalization.

The most remarkable cases of this class were the paralyses reported as cured. To my mind they were cases of poliomyelitis chronica infantum, which, while improved by relieving local irritative lesions, were certainly not completely restored.

That cases of reflex paralysis do occur, there can be no manner of doubt. Instances of this kind have been reported in the medical history of the War of the Rebellion, and have likewise been observed during the Franco-Prussian war. Thus, *e. g.*, if a person, as one report has it, receives a bullet in the region of the tenth rib, and the arm on the same side is immediately paralyzed, the course of the ball precluding all possibility of an injury to the nervous apparatus of the arm, either peripheral or central, we must admit that this is a true reflex paralysis.

Such cases have been almost invaraibly observed in sudden and violent injuries; whereas the paralyses alleged to be due to distant lesions of a chronic nature must, in my opinion, be regarded with suspicion.

The same is true of the reported reflex atrophies, whether resulting from acute or chronic distant lesions.

Our several paths in life our divergent; with the divergence in direction there is necessarily connected a difference in the facts gathered on the several fields of observation; from this difference there ensues a discrepancy of opinions and their inevitable clashing. It is by such antagonism, and in particular by our intraprofessional strifes and combats that truth is finally evolved and errors disappear.

It might appear that the foregoing remarks are but an example of the well-known *orationes pro domo,* so common in specialistic literature, and that they are no more nor less than one of the often witnessed efforts of a specialist emphasizing the importance of that branch of medicine which forms the subject of his predilection.

Far from it! The object of my criticisms was to bear testimony to the harmful and noxious feature of specialism, as tending by its luxuriant growth to overshadow, obscure, and dwarf "Internal Medicine," so-called, *i.e.,* that science which alone is capable of rendering the specialist fit for his work, and insuring that success which is not gauged by the amount of money he makes (often unearned and undeserved), but by the real and substantial aid which he bestows upon his fellow-men. Of all the branches of internal medicine, however, which specialists ought to cultivate, and a satisfactory knowledge of which alone can prevent self-deception on the part of the physician and unjustifiable meddling harmful to the patient, neurology stands foremost.

HYPNOTISM AND HYSTERIA.

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THE ROLE OF HYPNOTISM IN THERAPEUTICS.

[*Conclusion.*]

GENTLEMEN, you have by the means of the example I have given you, a general idea of the therapeutic results which hypnotism may give in hysteria. Without exaggerating its importance, for we must not forget that suggestion in a waking state, whatever be its mode of intervention, counts also brilliant successes,—it is just to recognize that hypnotism may render real service in the treatment of hysterical cases.

Does the field of action of hypnotism pass beyond the domain of hysteria?

I am not in condition to dispute it in any absolute manner, but I believe myself authorized in maintaining until further orders, that no very great results are obtained by this mode of treatment in cases which are not connected with hysteria.

I should, before going further, warn you against a frequent cause of error—an organic disease of the nervous system, or dynamic troubles independent of hysteria may coincide with neuroses. In such a case it is easy to be mistaken if care has not been taken beforehand to distinguish the share of each in the affection. It is, in fact, possible, if the patient is hypnotizable, that the situation may be ameliorated by dissipating or suppressing the hysteric element.

Here, for example, is a motor hemiplegia of organic origin which is accompanied by an absolute sensitive-sensorial hemi-anæsthesia, identical with that which may induce hysteria; the patient is hypnotized, and the anæsthesia is made to disappear by suggestion.

Unless a microscopic examination shows that the trouble is related with the lesion of the part affected in organic hemi-anæsthesia, it may be legitimately maintained that hysteria is the cause, or, in any case, that the contrary is not proven.

I have had the opportunity of observing a young woman attacked by paranoia; she had fixed ideas, scruples and agoraphobia; for five years she had scarcely left the house, for when, after great effort, she decided to do so, she was seized with inexpressible anguish, and was obliged to return home in great haste, and several times this attempt was followed by convulsive crises, presenting all the characteristics of an hysterical attack. I would add that this person presents several symptoms of neurosis.

I was able to hypnotize the patient, and suggestion had over her an incontestable influence; the amelioration was already quite appreciable after a few sittings, and at the end of a few months the patient was able to take long walks. This improvement has lasted a year. But observe, gentlemen, that agoraphobia was accompanied in this case by very characteristic hysterical phenomena; it may be admitted, then, that hysteria occupies an important place in the table of symptoms; that is, exercises an influence upon the concomitant nervous affection in increasing its manifestation, and that in reality, there again hypnotism has only lessened the hysteric element.

Here is another group of facts which might lead, unless attention is paid to it, to an erroneous opinion as to the place of hypnotism in therapeutics. There are sometimes observed in viscera disorders of motion or sensation, vaso-motor or trophic disturbances, ill-defined and difficult to classify in the nosography of the present day.

I acknowledge voluntarily, that in certain cases of this kind, when one has to do with hypnotizable subjects, good therapeutic results might be obtained by the aid of suggestion during the hypnotic sleep. But I am also inclined to believe that many of these more or less vague conditions arise from hysteria; we must, in fact, remember that a neurosis may provoke most varied phenomena, that it may manifest itself by an isolated symptom, and that it is not necessary for the admission of its presence to recognize all the different indications belonging to it.

At the same time I do not wish to maintain that all the affections which are not yet determined should be placed in the ranks of hysteria; on the contrary, it is my opinion, that the diagnosis should be rigorously made, and I have indicated in my memoir upon "Hysterical Ophthalmic Migraine," the conditions which should, in my opinion, be realized in a given case, in order that it may be legitimate to affirm that hysteria is the cause. Nevertheless, when the diagnosis cannot be given with certainty, the hypothesis of hysteria is often more or less probable, and in any case, observations of this sort should be provisionally set aside, as they cannot serve in the resolution of the question in dispute.

I do not think, however, that I push my exclusiveness to the last limits. I do not contest that certain independent phenomena of hysteria may be lessened, in a certain measure, by the aid of hypnotism.

Here is a patient named A. A., whom you have already seen. He is attacked by tabes, and the diagnosis seems to me incontestable; he has experienced, in fact, the flashing pains, and presents Romberg's symptom; also that of Westphal—incontinence of urine, a complete abolition of the sense of relation, and the Argyll-Robertson pupil.

Now, I have been able at different times, to cause in a few minutes the disappearance of a crisis of darting pains. But in truth I would not boast of having rendered him any great service, and I do not believe that his condition was sensibly modified by this method.[1]

These are only some of the results of the kind which may be obtained in affections independent of hysteria, and in particular in organic diseases of the nervous system.

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[1] I consider it interesting to call attention in passing to the fact that I can produce in this patient by suggestion, a muscular contracture of the lower limbs, which are, however, totally deprived of tendon reflexes. (See on this subject the Tuesday lectures of Prof. Charcot, 1888-1889, p. 282.)

I should add, before closing this chapter, that the practice of hypnotism does not seem to be without inconveniences. It has happened to several hypnotizers to excite attacks of hysteria by attempts of this kind, which supports our theory of the relation between hypnotism and hysteria. This danger should not be exaggerated, for it can most frequently be avoided when the experimenter is a prudent and competent physician. Nevertheless this result should be kept in mind, and attempts should not be made to hypnotize systematically all patients.

As any one can see, our pretensions are modest. Those of our opponents are, on the contrary, fabulous; and it would really seem, to hear them, that they have treated all diseases imaginable by this method.

Certainly it is not scientific to reject deliberately assertions which are in contradiction to those opinions which one may have, but it is legitimate in any case to demand rigorous proofs.

M. Bernheim and his pupils think they have furnished such proofs, for they profess to have based their theory upon innumerable observations. M. Bernheim has chosen among his those which he considers without doubt the best demonstrations, and has published them in his works as convincing. There are two hundred and eight observations in all, grouped in a certain number of categories.

This is the classification adopted in the work upon suggestion:

1st. Organic affections of the nervous system.
2d. Hysterical affections (seventeen observations).
3d. Neuropathic affections.
4th. Neurosis.
5th. Paresis and dynamic paralysis.
6th. Gastro-intestinal affections.
7th. Various pains.

8th. Rheumatic affections.

9th. Neuralgia.

10th Menstrual troubles.

In the book upon Psychotherapy, the author has grouped his observations in the following manner:

1st. Observations of traumatic neurosis.

2d. Observations of hysteric convulsions (nine observations).

3d. Various hysteric troubles.

4th. Observations of chorea.

5th. Observations of tetanus.

6th. Observations of genital neurosis.

7th. Observations of psychic neurosis.

8th. Alcoholism.

9th. Neurasthenic affections.

10th. Observations of neuro-arthritism.

11th. Observations of neurasthenic troubles, following different affections.

12th. Neuralgias.

13th. Rheumatisms.

14th. Spinal affections.

15th. Troubles connected with different organic affections.

16th. Menstrual troubles.

17th. Observations of suggestion by metallotherapy and magnetotherapy.

According to this catalogue, among two hundred and eight observations only thirty-two show hysteria as cause, and among the one hundred and seventy-six other cases there are many in which hypnotism has cured completely.

Then statistics seem at first sight to completely reverse the opinion which we have sustained. But if instead of being content with a superficial examination of these observations, they be analyzed with ever so little rigor, it will be seen that there is nothing in them. In fact, many of these cases belong manifestly—as may be shown by the symptoms which have been given, and in spite of contrary diagnosis of the author—to hysteria.

There are many others of which the account is so vague that it is impossible to form an opinion upon the nature of the affection in question, and in respect to which M. Bernheim makes an absolutely arbitrary diagnosis, or is content with a diagnosis entirely without precision. Now if one wishes to establish that it is possible to effect cures by means of hypnotism in affections having no relation to hysteria, it is necessary to furnish carefully collected observations where the diagnosis cannot be disputed, and which belong to nosological species well determined and quite distinct from hysteria.

I cannot pass in review and analyze before you, each of the one hundred and seventy-six observations. I will choose some examples which will suffice, I hope, to show that my criticisms are well founded. Let us, if you will, review the group, "traumatic neuroses" (Psychotherapy), which includes eighteen observations. Most of them, if not all, are related to hysterical manifestations, whether M. Bernheim recognizes it himself or is content with a diagnosis of traumatic neurosis. The following extracts will convince you without comment:

OBSERVATION I.—"Epigastric contusion; access of darting pains through the umbilical region; vertigo; painful points on the sternum and spine, and hemi-anæsthesia by suggestion. Cure of the accesses of pain in three days, of the vertigo in six days by hypnotic suggestion."

OBSERVATION VI.—"Spinal dorsal pain without lesion, of traumatic origin, dating back twenty years. Suggestion pseudo-ovarialgia. In 1864, the patient had, she says, a spasm occasioned by a conflagration, the same evening; this spasm consisted of a hiccough which lasted twelve hours, with return, without vomiting, with suppression of urine. The next day a return of the hiccough for eight hours. The day after another attack for six hours. These attacks took place during eight days, diminishing in length each time; the last attack lasted one hour."

OBSERVATION IX.—"Pain and functional impotence of the right leg, following a fall. Cured by suggestion in a few days. In December, as the result of a fright, she had a nervous crisis, which lasted a quarter of an hour, with strangulation, without losing consciousness."

OBSERVATION X.—"Painful contraction of the right leg, result of a sprain. Suggestion not successful. Three months later retention of urine, which persisted more than two years. Contracture of the left leg the fourth year. Cure by neural influences, after a duration of four years and seven months."

A young girl, twenty-six years old, entered about Nov., 1884, the surgical clinic for a right tibio-tarsal sprain. Prof. Weiss applied an immovable apparatus. At the end of a few weeks, having removed the apparatus, he reported that the foot was not swollen, but was rigid and painful. He asked me to see her; there was contracture and excessive hyper-æsthesia at the slightest touch. We diagnosed hysterical contracture developed by traumatism.

OBSERVATION XI.—"Painful contracture of the right arm, dating back eight months (following buccal fluxion). Cure in three days by suggestion."

OBSERVATION XII.—"Hyper-æsthesia of the right leg with muscular contraction, result of a fall. Cure of the hyper-æsthesia by suggestion; of the deviation due to the muscular contracture by chloroforming and plaster cast."

OBSERVATION XIII.—"Hysterical shocks following a blow upon the head. Cure by suggestion."

OBSERVATION XV.—"Convulsive crises, following pressure in crowd. Cure by suggestion. Sensibility to pricking is less marked on the left than on the right."

OBSERVATION XVI.—"Hysterical convulsive crises with sensitive-sensorial anæsthesia, following a blow. Rapid cure by suggestion."

Let us pass to the class of neuropathic affections.

OBSERVATION XXIX.—"Hysteriform symptoms. Sensation of emptiness in the head and buzzing in the ears. Moral inertia. Almost total and rapid disappearance of these symptoms by hypnotic suggestion."

OBSERVATION XXX.—"Nervous aphonia for a month. Cure by simple affirmation.

I would remark on the one hand that there is no difference to establish between nervous aphonia, and a hysterical aphonia; and that, on the other hand, the cure was obtained by suggestion in a waking condition.

OBSERVATION XXXI.—"Epilepsy; trembling of the hands, insomnia, cephalgia following, cured by suggestion."

Nothing proves in the account that it is a true case of epilepsy. M. Bernheim adds to this observation the following remarks:

"It was a question only of nervous troubles following epileptic attacks, which hypnotic suggestion improved."

M. Bernheim recognizes that in true epilepsy, hpynotism is almost without effect.

OBSERVATION XXXII.—"Nervous gastric troubles. Epigastric pain. Anæsthesia of the limbs. Rapid disappearance of the anæsthesia by suggestion; transient amelioration of the gastric trouble."

"On May 7th, analgesia was reported with anæsthesia of the trunk and upper extremities; the muscular sense is wanting, and sensibility exists only in the soles of the feet."

Let us now examine the groups of neuroses:

OBSERVATION XLVI.—"Choreic shocks localized in an arm. Cure in three sittings, every suggestion arrests the shocks."

"W. (Marie) sixteen years old, works in a lime factory; came for consultation July 17, 1884, with choreic attacks.

"July 17th, she showed spasms in the hand only, sudden spasmodic movements, raising the hand and forearm as if by a strong electric current, but without pain; these shocks recur obstinately every four or five seconds."

OBSERVATION XLVII.—"Choreic attacks dating back fifteen days, return several months after a general chorea. Cure in three sittings.

"Caroline V., eighteen years old, working in the same building and living in the same house as Marie W., was taken ill by imitation in the month of November.

"July 17th, she came with Marie W., the convulsive shocks were much like those of her comrade. They returned every two seconds."

OBSERVATION XLIX.—"Trembling of the left hand following chorea, and impossibility of writing with that hand. Cure in two hypnotic sittings."

"Claudine D., fifteen years old, was brought to me July 21, 1884, by two of her friends, work-women in the same shop, and whom I had relieved in a few sittings of choreic shocks by hypnotic suggestion.

"Fifteen days ago she was attacked with generalized chorea. For eight days she had an incessant lateral rhythmic trembling occupying the left hand, arm and shoulder.

"It might be believed at first sight that these observations establish the possibility of curing common chorea by means of hypnotism. It is not true. You know, in fact, that in the chorea of Sydenham the movements are irregular and disordered. These, on the contrary, are rhythmic. Chorea identical with hysteric chorea. We here have to deal with the beginning of an epidemic of St. Vitus' dance."

OBSERVATION LIII.—"Generalized chorea, dating back eight days. Improvement after two sittings. Almost entire cure by suggestion four or five weeks after beginning."

In this case it seems, according to the clinical exposé, that it was a case of Sydenham's chorea. But this affection is sometimes cured spontaneously after having lasted five weeks, and nothing proves the beneficial effect of hypnotism.

I extract from the class of dynamic paralyses the following passage:

OBSERVATION LXII.—"Psychic dynamic paraplegia of two months' duration. Notable improvement after one sitting. Complete cure in four weeks.

"The sensibility is perfect, the tendon reflexes are normal, the muscles are not atrophied; in the bed she makes all movements. I caused her to rise, and she cannot support herself without leaning upon her bed, even if her legs do not bend and let her fall. As antecedents she reported that she had frequent epileptic attacks at the adult age. She has had none for two years.

"I observe no sign of myelitis, and I think it is a case of dynamic weakness, which the impressionability has transformed into psychic paralysis."

It is incontestable that it is a case of psychic paralysis, but it is still more exact to diagnose it as astasia of hysteric origin. I call your attention in the group of neurasthenic affections (Psychotherapy) to the following observations:

OBSERVATION LXIII.—"Neuropathy of ten years' duration. Alimentary vomiting for a year. Left hemi-anæsthesia; momentary suspension of anæsthesia by suggestion. Cessation of vomiting. Improvement without complete cure."

OBSERVATION LXIV.—"Neurasthenia of eight months' duration. Pain in the right illiac fossa, below the costal cartilages, laryngic constriction, dyspepsia, etc. Right hemi-anæsthesia. Rapid restoration of sensibility by suggestion. Notable permanent improvement obtained in ten days."

Hysteria is manifestly in question, for hemi-anæsthesia does not belong by any right to neurasthenia.

The other observations are not sufficiently circumstantial to make it possible to eliminate the hypothesis of an intervention of hysteria. Besides we must observe, on the one hand, that it is not a question, in all cases, of definite cure, and on the other hand, that quite often the neurasthenia is rapidly modified under the influence of simple change of scene or the rest of a few days.

Let us add to this subject that M. Bernheim recognizes that the neurasthenia which he calls hereditary is most often incurable. Acquired neurasthenia alone may be improved or cured. It is plain that M. Bernheim is reserved in this regard, even though he considers, as we have just seen, observations in the ranks of neurasthenia.

Let us now consider the chapters in organic affections of the nervous system.

M. Bernheim recognizes in principle that when it is a question of organic affections, the super-added dynamic element alone is capable of being modified, whenever the account of the results which he has obtained in cases of this kind will give, if one accepted without criticism the diagnosis given by the author, a high but inexact idea of the therapeutic influence which has been exercised by suggestion and hypnotism.

In the work upon Psychotherapy I find in the case to which I have called attention above, in which the diagnosis is of infectious myelitis, is not at all justified; I only remind you of it.

Here are a few extracts from another observation:

OBSERVATION CII.—"Cerebral affection of nine years' duration. Vertiginous titubation in walking, with obnubilation by movements of the head on the spine. Left anæsthesia of two years' duration. Disappearance of these symptoms by a magnet (collected by M. Ganzinolty, interne in the service)."

Is it not a strange thing, almost marvelous, to see an affection so grave, symptoms so complex, of a titubation and vertigo lasting more than seven years, which have resisted the most energetic treatment, yield in a few hours to the application of a piece of magnetized iron? With what lesion have we to do? While expecting from new facts more complete light, we can admit the very probable existence of cerebellar affection. There remains the left hemi-anæsthesia.

Must we admit, aside from the former cerebellar centre, a second more recent lesion, which involves particularly the upper third of the internal capsule? Such is, it seems to us, the only opinion reconcilable with the generally admitted doctrinal ideas.

This diagnosis, which M. Bernheim gives only with a certain reserve, does not seem to me at all well founded. All the phenomena in question may be observed in hysteria, and by reason of their evolution, it is much more probable that they were hysterical manifestations.

In the book upon Suggestion the following observations occurred:

OBSERVATION IX.—"Paresis of traumatic origin of the muscles of the hand. Immediate restoration of movement by suggestion.

"C., twenty years of age, superintendent of works at Reninmont, came to consult me, January 8, 1887. Three months before he wounded himself on the hand at the level of the right pisiform bone. The hand closed immediately. There was a certain degree of anæsthesia in the forearm which has disappeared. Since that time C. has not been able to use that hand; he cannot separate the fingers nor open nor shut the hand spontaneously. Dr. Guyot, of Reninmont, thinking there was a lesion of the nerve, sent him to my colleague, M. Weiss, who had me see the patient.

"We hypnotized him: he reached the third degree. I suggested that he could open and close his hand and separate his fingers; added manipulations to suggestion. At the end of ten minutes I wakened him. He could open and shut his hand and separate and bring together his fingers. The same evening he returned to Reninmont in spite of my desire to have him remain a few days to insure his cure. Was immediate result permanent? Certainly; and in case of a relapse, the suggestion repeated would certainly succeed in restoring the function permanently."

I have cited this observation *in extenso*. Really I cannot conceive how M. Bernheim has been able, with such data, to class this case in the group of organic affections of the nervous system.

OBSERVATION VIII.—"Nervous troubles in the left brachial plexus, sometimes radiating through the thoracic and cardiac nerves, tingling, and numbness, spasmodic pains, contraction, constrictions; suggestion dissipates these attacks instantly, but does not prevent their return.

"On December 25th, being in bed, he felt the whole left hand numb and tingling, as if he had lain upon it. This numbness persisted the whole day; at six o'clock in the evening it crept up to the shoulder, little by little, then spread downward along the armpit to the hip. The next morning his neck was stiff; he had the sensation of a bar in the left side of the neck. The tingling sensation lasted three days, with complete insensibility of the whole upper extremities and paresis. At the end of three days the tingling sensation disappeared, and after five or six days sensibility was entirely restored. The following days, continuous trembling, light and persistent in repose, which lasted until March. Then crises supervened, characterized by numbness of the hand, ascending in the arm and descending the left side of the thorax; the forearm contractured, the hand prone, the fingers bent with sharp pains, and sensation of constriction and suffocation in the precordial region.

Here again there is reason to consider hysteria as cause rather than an organic affection of the nervous system.

M. Bernheim also publishes several cases of organic hemiplegia with hemi-anæsthesia, in which suggestion has caused the disappearance of the disturbed sensibility. But what proves that hemi-anæsthesia has for its cause the existence of an organic affection, since no microscopic examination was made.

An autopsy was had, however, in a case which, in appearance has a fundamental importance. The following is a *résumé* of this observation:

OBSERVATION I.—Left hemiplegia with hemi-anæsthesia, which has been of a year's duration. Passing right hemiplegia. Lesions in each hemisphere. Bilateral post-hemiplegic tremor simulating a disseminated sclerosis.

Bilateral reflex tremor and contraction of the left extremities. Cure of hemi-anæsthesia, of trembling and of the tremor by a simple application of the magnet to the face. Return of the contracture of the left limb, with flexion of the hand. Twenty months later, cure of the contracture by hypnotic suggestion. Diminution of the oppression. Survived three years. Autopsy.

You suppose, perhaps, that the contracture and the reflex tremor are due to a secondary degeneration of the pyramidal tracts, and that hypnotism can, consequently, cause the disappearance of the spasmodic phenomena imputable to that lesion. Undeceive yourselves, for, as is noted in the course of observation, the spinal cord does not present secondary sclerosis. In fact, nothing in these observations demonstrates that hypnotism can exercise a marked influence upon organic affection of the nervous system.

You have doubtless heard it stated that hypnotism renders eminent service in the treatment of neuralgia. Well, gentlemen, I have read attentively the different observations of sciatica which M. Bernheim has published, but I have not seen there a single example of intense neuralgia, of sciatic neuritis accompanied by amyatrophy. In most of these cases the patients have suffered for several days or weeks more or less vague pains in the posterior part of the thigh. Now has not every physician observed, in cases of this sort, an improvement or very rapid cure under the influence of injection of distilled water, an applcation of a vesicant or an application of methyl chloride? We know, besides, that hysteria may produce analogous pains, and nothing prevents the supposition that in some of these observations, at least, the pain is of hysteric origin.

I do not contest the exactness of the results obtained, but these are not in contradiction with the thesis which I sustain.

Certain alienists have professed that mental diseases may be modified by hypnotism. There is reason to be very reserved in this regard. Here, in fact, is the opinion of several physicians who are most competent to judge.

M. Magnass has authorized us to say that the experiments upon the treatment of insanity by hypnotism, made at the office of admission during three years, have to the present time given no appreciable result. Besides, M. Bernheim himself recognizes that the domain of alienation is most intractable to suggestion.

M. Forel, of Zurich, shares this opinion.

"Delirious ideas," says he, "have never been modified in any patient, even those which I have succeeded in hypnotizing and in rendering anæsthesic or amnesic, and in those who I have made to realize post-hypnotic suggestions, have refused to accept my suggestions when running counter to their frenzied ideas. I have never succeeded in influencing the course of true melancholia (I do not mean hysterical melancholia) by suggestion, at the most I have been able to produce sleep sometimes and to hasten convalescence in one case."

M. Briand, chief physician of the asylum of Villejuif, says:

"I have tried many times to put the insane to sleep, in cases presenting no traces of hysteria, but I have never been sufficiently fortunate to obtain results from it."

Gentlemen, I hope this rapid critique of observations, which ought to confound us, has led you to appreciate their value. Is it not legitimate to say that outside of hysteria there exists no disease susceptible of being modified in any noteworthy way by hypnotism, or at least that the contrary has not been proven, for the observations published for this purpose are far from being conclusive.

I believe myself authorized in concluding from all this disscussion that hypnotic phenomena are of the same essence as hysterical phenomena, and that a close relation exists between hypnotism and hysteria.

SLEEP MOVEMENTS OF EPILEPSY.[1]

By J. W. PUTNAM., M.D.,
Buffalo, N. Y.

IN our attempts at localizing the seat of irritation in the brain in cases of epilepsy, we have for data the history of former head injury, of which we sometimes find proof in adherent scars in the scalp, sometimes there is a distinct depression in the skull.

When we have no history of cranial injury, we often get a history of the character of the attacks, and upon this history of the aura and the muscles first convulsed we rely for our localization.

Owing to the nature of the disease we are obliged to rely in most cases upon the observation of others.

In the experience of many, it has been difficult to obtain clear and positive statements as to the manner of beginning of an attack. Often the patient is unobserved, and when observed it frequently happens that those about him are too much excited or too ignorant to make trustworthy observation. Last fall it was my fortune to have a patient who was at that time having a convulsion almost every night at about ten o'clock.

While waiting to observe an attack, I noticed that the patient was restlessly tossing her left arm while the right was quiet. The movement was different from the ordinary purposeless movements of restless sleep. It was a slow raising of the arm from the chest or side up over the head where it would remain for a moment and then slide down the pillow. This occurred several times, no movement of the legs was observed. That night she had no convulsion, but I was informed by the mother that on other nights she always turned over on her left side during a convulsion.

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[1] Read at the meeting of the American Neurological Association, New York, June 22, 23, 24, 1892.

From the observation of this movement of the left arm, during sleep, it occurred to me that a series of observations of epileptics during sleep might show similar movements, which might be of localizing value.

In all epileptic cases careful inquiry was made as to how the patient slept, and what position was naturally taken. Directions were given that the patient be watched for several nights, and a report made as to whether the sleep was quiet or not. If he were restless, directions were given to notice which limbs were moved the most and how.

As a result of such directions some interesting facts were learned.

A medical student who had been epileptic for about three years, and who had convulsions at intervals of from four to eight weeks, was observed by a fellow-student who slept with him. He reported that as far as he could judge, he was ordinarily a quiet sleeper, but that when he was restless he either tossed the left arm or moved the right leg. He did not think that the right side was restless.

A patient of Dr. Park's, a child of five years, on whom he performed linear crainotomy, had had convulsions for two or three years, was reported by the mother that she had noticed that when he was restless at night that he moved the right leg a great deal more than his left, and that he always had done so. She could give no definite idea as to how he moved the leg.

In the case of a boy, aged nine, who had had convulsions at irregular intervals ever since his fourth year, his mother reported that, as a rule, he slept quietly, but she had twice noticed that he was restless on the right side. The character of the movements was not noticed.

A fifth case, aged forty, who had suffered from migrane for the greater part of her life, and who has had epilepsy for ten years, was observed by her sister who slept with her. She reported that, as a rule, she was a quiet sleeper, but that when she was restless it was on the right side.

Fourteen other epileptics were observed without result. Of these fourteen, eleven were sound sleepers, three were occasionally restless, but the restlessness did not show itself in any special manner or extremity.

In only one case have I had a patient operated on who had sleep movements. This was a girl, aged thirteen, who had had epilepsy for ten years. She was observed for three weeks by a trained nurse graduated from the Buffalo State Hospital for the Insane. She made a report from which I make a few abstracts.

Nov. 16th, 1.20 A.M.: Left arm was suddenly drawn up over the head and then fell down. This happened three times at intervals of eight or ten minutes. After a half hour there was a convulsion in which the body was drawn to the left side. The left arm was bent, with the fist resting on the shoulder.

Nov. 17th, 2 A.M.: Drawn to left side, arm drawn up as on previous night.

Nov. 18th: No convulsion, quiet all night.

Nov. 19th: Had no convulsion, but the left hand and arm were restless and moving about most of the time while asleep. Body quiet all night.

This last record shows best a case in which the sleep movement was definite and which corresponded with the character of the convulsion.

Nov. 20th, 1.35 A.M.: Had a spasm in which the left arm straightened out first, hand bent, then legs and right arm were contracted. No movements during sleep.

Other nights showed similar observations.

In January, this year, Dr. Park trephined over the arm centre on the right side. The dura was not adherent, the pia was œdematous. A layer of the cortex was removed.

Up to the present the operation has not proved of benefit, which is not surprising when we remember that the epileptic habit had been established ten years.

In attempting to interpret these sleep movements, I have carefully read the literature on epilepsy, but find no mention of any such observations.

Hughlings-Jackson assumed that there are three levels in the motor nervous system, which he calls the highest, the middle, and the lowest level. The highest, chiefly motor, is the frontal lobe. The middle level is composed of the portion which we understand as the motor region comprising the ascending frontal and parietal convolutions and the corpus striatum. The lowest level consists of the cornua of the cord, Clarke's column, and Stilling's nucleus. Starting with this theory, I venture the following explanation: When the patient is in profound sleep, all these levels are in a state of functional rest, and we have a quiet sleep undisturbed by movements, as no stimulus is transmitted to the muscles.

In a less profound sleep, one in which the patient is restless, I have assumed the highest level to be at rest and no longer exerting an inhibiting control over the middle level. This in a healthy person would show itself by general restlessness. In an epileptic, in whose motor region there is an irritated area of greater excitability than normal, it is assumed that it is less profoundly asleep than other areas. Hence in such conditions we may have pronounced and definite movements occurring during sleep and limited to the limb controlled by the irritated area. These movements may occur in only a few patients, and may occur in them only on occasions when slumber is disturbed.

Whether or not I am right in my interpretation, and whether it will be considered safe to localize a lesion from sleep movements alone, are questions which I very greatly desire to have answered.

A FURTHER CONTRIBUTION TO THE PATHOLOGY OF ARRESTED CEREBRAL DEVELOPMENT.

BY B. SACHS, M.D.

THE gross cerebral lesions of childhood have received much attention of late years, and the conditions which lead to the development of paralysis of epilepsy and of idiocy, or possibly of all three conditions combined, are tolerably well understood. Among the large number of cases of this description that I have had occasion to examine, one small group has attracted my special attention. It includes possibly the severest form of idiocy (the palsy or epilepsy, if present, being of secondary importance). It runs in families, a number of children of the same family being similarly afflicted, the disease running the same course in each case; these children appear to do well until about the fifth to eighth month; then a marked retrograde movement sets in, all the cerebral functions, sensory and motor, become impaired, the child becomes idiotic, blind, more or less paretic, and fortunately dies, promptly enough, of marasmus.

The first case of this description, I reported to this Association five years ago. I may claim for this case that it stands as one of the first in which a minute histological examination of the cortex had revealed the changes underlying the development of one form of idiocy.

The patient, who is the chief subject of this paper, is a sister of the child whose brain I reported upon five years ago. A healthy child, a boy, has been born between these two children, and is an exceptionally bright child. The occurrences of this same form of idiocy in

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[1] Read at the meeting of the American Neurological Association, New York, June 22, 23 and 24, 1892.

several members of one family I have observed a number of times.

Last August, a lady brought to me her boy, R. H., aged thirteen months. This was her tenth child, five children having died; of these, three were exactly like the one brought to me, and all died before the age of two years of general marasmus. The mother has had no miscarriages, and I could not reasonably entertain even a suspicion of syphilis, the mother also denied a neurotic family taint; she was an exceptionally healthy looking woman, and all her children were entirely normal after easy labors. The child brought to me is said to have weighed twelve pounds at birth; was nursed at the breast, and did well until six or seven months old; then began to droop its head; had its first teeth at seven months; since that time child has been steadily losing, mentally and physically; the fontanelles were still open, the head moderate in size; there was a general spastic condition in both legs, and is not able to, nor does not attempt to, walk; has only the barest perception of light, but is excessively startled by every sound; the eyes diverge, but there is no nystagmus; it has occasional slight spasms, but no convulsive seizures. I have not heard of the child since, but I have no doubt it has joined the preceding three.

The prompt development of blindness with idiocy in all these cases—I have the history of six such cases—points to what we find—a morbid process involving equally frontal, parietal and occipital portions of the cortex.

The history of the child whose entire central nerve axis has been subjected to careful histological examination is as follows:

The child was thirteen months old at the time of my first consultation with Dr. S. B. Jones. The experiences with the first child led the parents to exercise unusual care in raising this child; it was born at full term, and was of entirely normal physical development; was given the bottle at first, later on was nursed at the breast; it did fairly well, and appeared to be as far advanced as any child until the age of eight months; since that time there has been steady retrogression. On closer examination it was found that the child could not hold its head up, nor could it sit up unless supported; it has no perception of light; the pupillary light reflex is entirely gone; it has slight sense of hearing, but does not distinguish between sounds; there is a slight spastic condition of upper and lower extremities; no spontaneous movement of any sort; child sits listlessly on nurse's lap; the knee-jerks on both sides were distinctly exaggerated; no ankle clonus was obtainable; plantar reflexes were also increased; at this time one tooth was breaking through; the fontanelles were not entirely closed. I entered upon my notes at the time: Resemblance to first child very close in every respect except that the paresis is more spastic in character than in the first child. The effect of treatment was, of course, *nil.*

Six months later I had an opportunity of seeing the child again, together with Dr. Kimball. The child had gone down hill steadily; sight and hearing were completely lost; the mind was entirely blank, and the child died at the age of twenty months (four months earlier than the first child) of an extreme marasmus. A week before death had considerable fever and several convulsive seizures; but these were the only ones that had occurred during the entire course of the disease. I performed the autopsy twenty-two hours after death. In order to determine whether there was latent specific disease, I made a most careful examination of all the organs of the body, and of the larger glands, but I found no proof of any such taint; the liver, heart, lungs, spleen, and intestines were entirely normal, except that all the organs were remarkably pale; the heart and aorta were of normal size. The skull was symmetrical, of good size, but unusually thin; the fontanelles were closed, but still transparent. The dura was adherent to the skull so that the brain had to be removed with the calavarium. As in the case of child No. 1, the brain was firm to the touch, almost as hard. I noted at the time, as a brain that has been in Müller's fluid for some weeks, the pia could be easily detached, and the cortex, though pale, presented no unusual appearances.

The anomalies of fissuration, such as were noted in the first case, were not present here.

The spinal cord presented normal macroscopical appearances. The brain and spinal cord were at once immersed in Müller's fluid and carefully hardened. Careful sections were made of all parts of the cortex of the ganglia, of the optic chiasm, of the pons medulla, and of the lower portion of the cord. The cervical and dorsal portions of the cord were, unfortunately, lost in some mysterious way.

All the newer stains were employed by Dr. Powers who assisted me in this part of the work, but very few and unimportant changes were found either in the ganglia, pons, medulla or cord; the chief changes, and very marked ones in this case as in the preceding ones, were found in the cortex, and in all regions of the cortex to an equal degree. I would have but to reproduce the drawings accompanying my first paper on this subject to illustrate and explain the specimens from this case. It is evident that the chief morbid condition is as represented by the cortical cells.

There is not in all the specimens I have examined a single normal pyramidal cell; in all the layers the cell bodies are altered either in shape or in general appearances; the cell nucleus and the maleolus are distinct enough, as a rule, but surrounded by an altered cell body which does not properly take the ordinary stains. The neuroglia cells appear somewhat increased, and the tissue rather dense. The blood-vessels are present in at least the usual proportion, most of them filled with blood, but no sign of any active inflammatory condition. I attached special importance to the determination of this point, as a paucity of blood supply might have been supposed to have been the starting-point of this trouble.

The white fibres entering the cortex showed in departure from the normal, as can be seen on numerable Weigert specimens, but I have not succeeded in demonstrating tangential fibres. The ganglia were carefully examined, but their cellular structure was found normal. The cord was but imperfectly examined, for reasons stated above, as the specimens taken from the lower segments, it was evident that the cellular development was quite perfect, and there was no distinct degeneration in the white columns.

Comparing the results of this examination with the facts published a few years ago, that this arrest of cerebral development is practically an arrest of *cortical* development—a true *agenesis corticalis*, but by what immediate forces this is brought about it is difficult to say. In the first case the history of traumatism during pregnancy was worked as a possible cause, but in the present instance this factor is wanting. We must fall back upon the neurotic taint; in the case of the other children mentioned (four in one family) there is no proof of even a "neurotic taint." We are therefore somewhat at sea as regards the ætiology of this special form of idiocy, but on the strength of the two autopsies now placed on record to which we might add similar findings of Kast and Jensen, we may claim the chief morbid changes underlying that form of idiocy which is associated with blindness and which leads to a prompt, fatal termination. The absence of epilepsy is worthy of note. This can hardly be dignified as a distinct *type* of diseases, but it represents the most pronounced form of idiocy and of arrested cerebral development.

SOME CONTRIBUTIONS TO THE STUDY OF THE MUSCULAR SENSE.[1]

By GEORGE J. PRESTON, M.D.,

Baltimore.

THE nearer we approach the subject of sensation, whether it be from the physiological or psychological side, the more complex does it appear. Our knowledge of the cortical representation of sensation, leaving out of view the special senses, is exceedingly vague and uncertain. The analogy which exists between the special senses and general sensibility would lead us to look to the cortex of the occipital or temporosphenoidal lobes for the sensory centre, while psychological and we may add physiological reasoning would rather impel us toward the more modern view of a close relationship existing between motor and sensory centres. The more one studies the minute histology of the *cortex cerebri*, the stronger becomes the impression that the systematic arrangement of the cellular elements has something more than a mere histological significance.

Unfortunately experiments upon the lower animals give us very untrustworthy results and aid us very little in the solution of this *quæstio vexata*. Limited cortical lesions in the human subject are comparatively rare, but the results of operations on the cortex for Jacksonian epilepsy would rather give countenance to the modern notion that the motor and sensory centres lie in the same region. The course taken by sensory impulses through the cord is in like manner uncertain. We know that the sensory nerves enter the cord by the posterior bundle, and thence their course is uncertain and various, passing for some distance in the posterior columns, then

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[1] Read at the meeting of the American Neurological Association, New York, June 22, 23 and 24, 1892.

into the gray matter, until they at length converge to the crura and capsules. Our third segment, dividing roughly in this way for the sake of convenience, presents likewise a somewhat unascertained distribution. We understand clearly enough the cutaneous distribution of the sensory nerves, but as yet we are by no means sure of the mode of distribution of sensory nerves to such structures as muscles, tendons, and joints, though Chauveau's recent work makes the existence of sensory nerve endings in muscle highly probable.

The above statement represents in a very general way the sum of our knowledge as to the anatomical relations of sensation, using the term in its physiological significance, and indicates the difficulties that may be expected in the study of the muscular sense, since the latter is afferent in its nature and hence must travel, in part at least, the same paths as do the general sensory impulses.

When we consider the sense of touch we find it divisible into tactile sensations proper, painful sensations, temperature sensations, muscular sensations, and perhaps certain others; and confining our attention to muscular sensations we find that they are compound and may be reasonable subdivided into several groups. First, the pressure sense, which is itself twofold, namely, the perception of pressure, as when weights are laid upon the hand and the discrimination between different weights by balancing them in the hand. The first of these processes is passive in nature and lacks the precision of the second, which is far more active. In the former case the weights must differ by something like one-third before they can be distinguished from each other, while in the latter we can discriminate between weights differing by one-seventeenth.

Second, the sense of coarse movements of the limbs, an active phenomenon, carrying with it somewhat of the sense of resistance.

Third, the sense of effort which certainly owes its existence in part to afferent impulses, though it is perhaps equally certain that it is in part dependent upon central cell activity.

Fourth, that sense by which we are enabled to locate the parts of our body. Gowers call this the rest-posture sense; but as this term is somewhat cumbrous, we will call it simply the posture sense, bearing in mind its purely passive nature. This last subdivision of the muscular sense, or, as we have called it, the posture sense, is the one upon which the remarks made in this paper will most directly bear. It differs in its nature from the first three divisions of the muscular sense according to our arrangement, more widely than they differ from each other, having little or none of the active element which enters largely into the composition of each of the first three varieties, and it also is far more independent of general tactile sensibility than they. A very slight consideration of the phenomena which characterize the posture sense is sufficient to convince us of its importance. By it we are made aware of the position of the various parts of our body, and are enabled to locate them with more or less accuracy without the aid of the other senses. Of course in making tests of the posture sense it is necessary to exclude the other senses, especially sight, since we habitually employ the sense of sight to aid the posture sense. The tests for the recognition of the presence or absence of the posture sense are rather crude. The subject is blindfolded and told to touch certain parts of the body, as the nose, first with one forefinger and then with the other; is required to put the two forefingers together; to place one hand on the other, after varied passive movements have been made with one arm by the operator; is made to put the heel of one foot upon the toe of the other, and is required to imitate as exactly as possible, with one limb, the position of the corresponding limb, which has been arranged by the operator. These experiments may be made reasonably exact, and may be greatly varied as the ingenuity of the operator suggests. One is struck at the outset by the fact that normal individuals vary greatly in the acuity of posture-sense perceptions. It would be impossible in the present state of our knowledge of the subject to fix upon a normal standard. We are obliged to fall back upon our experience and try the cases by an empirical standard that each operator sets up.

Upon second thought, we should expect this variation in any sensory phenomena. Many of the experimentors upon the pressure sense formulate the most exact laws of the ratios of perceptible differences in weights, but the later experiments of Galton and others show that no such exact laws exist, and that the same diversity in pressure-sense perceptions in different individuals obtains as in the case of other sensory phenomena.

When we come to consider the nature of the posture sense, we see that the information that we derive from it must travel in afferent paths, and not as some observers have thought, be partly dependent upon central cell activity. It is not possible to conceive of the posture sense being composed of anything but afferent impulses. We are able to appreciate perfectly the infinite variety in position which our limbs may be made to assume passively, so that the sense of effort cannot enter in as a factor. The knowledge that we gain by the posture sense must necessarily precede the voluntary movements of our limbs. Clinical facts afford ample proof of the afferent nature of the posture sense, for we find it diminished or lost when the lower segments, the nerve or cord, are injured or diseased, the centre in the brain remaining intact. The afferent impulses composing the posture sense differ greatly from most other afferent impulses with which we are familiar in that there is no appreciable reflex time required. We must be kept constantly informed of the exact position of our limbs in order to make the necessary muscular output. If we were ignorant of the exact position of our hand we could not tell how much energy would be required to raise it to the head. We are familiar with the great waste of energy by the tabetic, due to loss of posture sense. He raises his feet higher than necessary, he brings his hand too forcibly upon some object, or he may not expend enough energy at the first effort, and a second is required. Unless his eyes are constantly fixed upon his limbs he is not aware of the position of his arms or legs, and consequently misjudges the amount of force needful for the production of specific movements. In the normal individual, then, this knowledge of the positions of the limbs, of the parts of the body generally, economizes the output of energy, and we can explain its constant nature only by supposing a continuous passage of these impulses from the periphery to the centre. If we were obliged to wait to get a special stimulus from a limb in order to ascertain its exact position before performing any voluntary act, our movements would become too slow to be useful. It is very difficult in the present state of our knowledge to assign any definite function to the centre which acts as the recipient of these afferent impulses. It probably serves to bring these afferent impulses into close relationship with the motor centres. We can probably improve the posture sense by practice, and in children it only gradually acquires precision. A ready explanation of these facts is that the path of the afferent impulses to the motor centres becomes more and more familiar through the agency of the cells which represent the posture sense in the cortex.

Another fact which might be brought forward in proof of a certain activity in the cortical centre of the posture sense is the curious set of sensations experienced by persons who have lost a limb. These individuals, as is well known, very often experience a sense of the presence of the lost member, and this it would seem is sometimes entirely independent of any irritation of the nerve endings in the stump. I recall the case of a man who had his arm amputated near the shoulder, and at first he referred his muscular-sense impressions to his hand, later to his elbow, and finally to the stump, when his posture sense had become properly readjusted. The cells in the cortex have become so habituated to receiving the continuous stimulus from the limb and referring it to or interpreting it as coming from the terminal nerve fibres, that there would seem to be left behind a certain posture memory after the limb has been removed.

It would be interesting to note whether in the case of children who have lost limbs and in whom the cortical cells have not had time to store away impressions to the same extent as the corresponding centres in the adult, the same things obtains. As opposed to this seeming instance of posture-sense memory might be mentioned the sensation of absence of a limb which one sometimes experiences when awaking at night after having lain upon the arm. This sensation is most certainly due to the fact that the customary incoming impulses have been cut off by the temporary pressure paralysis

The analogy between posture sense and muscle tonus seems very close. It is necessary that the muscles be kept slightly stimulated ready for use, with the slack taken in, otherwise when we attempted any voluntary movement time would be lost in getting the muscle taut. So in like manner it is necessary that we be kept informed, so to speak, of the exact position of our limbs that no time be lost in finding them.

The conception, then, that I have of the posture sense, is that it is a distinct, well-defined sense, composed of impulses in the main subconscious, originating in the muscles, joints, tendons and skin, and passing continuously to a centre in the cortex cerebri, which centre is in close relationship with the cortical motor centres.

We come now to the consideration of the clinical facts which bear upon the subject of the posture sense. As has been noted, experiments upon the lower animals offer little or no assistance, for although we can artificially produce in them inco-ordination of muscular movements, it is impossible to say how much this inco-ordination owes to loss of posture sense. We are obliged, then, to fall back upon clinical observations of cases in which there has been noted loss or impairment of posture sense. Unfortunately the posture sense is rarely tested by the general practitioner, and it would appear that it is not always included in the routine examinations in the dispensaries for nervous diseases. Nevertheless there are enough carefully recorded cases to warrant certain conclusions being drawn.

One of the most essential facts to be established, and one which has occasioned a good deal of dispute, is whether, from clinical data, we are warranted in speaking of the posture sense as a distinct variety of sensation. Furthermore, if this be granted, can we separate it from the other members of its class, as the pressure sense, for example.

That the posture sense is entirely distinct from general tactile sensibility there can, I think, be no reasonable doubt, though denied by so distinguished an observer as Dr. Ferrier as late as 1887. References could be given to a large number of cases to prove the truth of this assertion. Bastian has collected a number of typical cases. Erb states that posture sense is independent of general tactile sensibility. Gowers, in his last edition, says "the sense of posture may be lost when cutaneous sensibility is normal, and conversely, the skin may have lost most of its sensitiveness when this knowledge is perfect." I have repeatedly observed in cases of multiple neuritis loss of posture sense at a stage when general sensibility had returned, or in cases showing very little loss of skin sensibility, and on the other hand, preservation of posture sense with very great loss of tactile sensibility. The explanation of this apparently contradictory statement, that in the same disease we find such different symptoms must be looked for either on physiological or anatomical grounds. We often see in cases of pressure paralysis loss of motor power with little or no sensory involvement. In the same way, then, either the fibres of the nerve which conveys posture-sense impressions have escaped injury, or the nature of the injury or disease is such that it interferes more with the conduction of some impulses than of others. A still more conclusive proof of the dissociation of posture sense and tactile sensibility is afforded by the following case recently under my care:

W. L., aged thirty-six, laborer. Family history good. Patient has had syphilis, and examination of his heart shows marked mitral and aortic disease. No very distinct history of rheumatism. On the morning of the attack he felt perfectly well, and while sitting in a chair, after breakfast, was attacked with vertigo and dizziness, and everything became black before his eyes. He fell on the floor, and, from his statement, had only a partial loss of consciousness. He then got up and went to his room and got in bed, and in about an hour he noticed loss of power in his right leg, and shortly afterward in the arm of the same side. Says he was able to talk after the attack, but his friends could not understand him. From close questioning, it was doubtful whether there was any aphasia; certainly there was none a few weeks after the attack. This is interesting in view of the fact that he was distinctly left-handed and conforms to the rule. On examination, a week or more after the attack, there was noted complete right hemiplegia, with marked right facial paralysis. No aphasia. No disturbance of general tactile sensibility. Almost absolute loss of posture sense. I moved the paralyzed arm after having placed my hand over the patient's eyes, and asked him to touch the hand with the sound hand, and after groping about for some time he said he was unable to find it. Similar tests with the legs gave the same result, namely, no loss of general sensibility, with practically absolute loss of posture sense. Temperature sense on the paralyzed side was practically unimpaired, though I may say that the tests for this latter were hurriedly made by my assistant. Temperature sense and tactile sensibility normal on the unparalyzed side. Several months after these observations were made there developed on the paralyzed side a very marked hyperæsthesia, while the posture sense remained absent. Autopsy, made about one year after patient was first seen, showed the internal capsule of the left side softened and broken down. One of the lenticulo-optic arteries was entirely closed. The softening of the capsule extended well into the posterior third of the posterior limb. A number of cases of hemiplegia have since been examined and two cases found in which there was moderately well-marked loss of posture sense;

in one of these cases there was slight loss of general sensibility, in the other it was normal.

Beaunis shows in a very interesting experiment, which, however, seems not to have been repeated, a simple way of dissociating general sensibility and posture sense. A singer was requested to sing a difficult piece of music, and then the larynx was rendered entirely insensitive by cocaine, and the song was repeated with practically the same exactness, thus showing that the muscular and cartilaginous structures of the larynx were capable of making the necessary nice adjustments independently of general sensibility.

We would expect to find a more intimate relationship existing between the various subdivisions of the muscular sense, as they are set forth in the beginning of this paper, than exists between the muscular sense and general tactile sensibility. Whether we can distinctly separate the pressure sense from posture sense, and these two from the sense of resistance and sense of effort is not clear. Among those who have held that several at least of these were distinct and separable parts of the muscular sense, may be mentioned Duchenne. A discussion of this question, however, would extend unnecessarily the limits of this paper.

We may, then, consider it definitely proven that the muscular sense, or at least one part of it, the posture sense, is composed of afferent impulses, which are entirely independent of general sensibility. The next step that suggests itself is the starting-point of these afferent impulses. Clearly, as several observers have noted, the muscles alone—that is, sensations coming from them—cannot give us the information we require as to the position of our limbs. How, for example, could we be made aware of the position of the forearm produced by contraction of the biceps if the impressions came solely from this muscle? We might obtain in this way some general information as to the position of our limbs by means of the memory of the muscular contraction and the result produced, a stored up experience, but it is impossible to conceive that we can in this way be kept informed of the exact position of our limbs. That the muscular element is a very important factor is proven by the fact that the muscular sense of the ocular muscles informs us of the degree of convergence of the visual axes, and consequently is a most necessary element in our appreciation of the size and distance of objects. Undoubtedly the tendons, the joints, and their coverings, and perhaps the bones, all aid in producing the posture sense, or rather from them proceed nerve fibres conveying posture sense impressions.

The course of these impressions is almost certainly through the posterior columns of the cord. The loss or impairment of posture sense is an almost constant symptom in sclerosis of the posterior columns. If it were admissible to draw conclusions regarding the muscular sense from the symptomatology and pathological anatomy of tabes, it would seem that posture-sense impressions run a continuous course in the posterior columns. At all events we find in tabes loss of muscular sense, with often little or no involvement of skin sensibility, and only the posterior columns involved.

It seems to me probable that the fibres conveying the posture-sense impressions pass into the restiform body, thence to the cerebellum and on to the great brain. In three cases of tumor of the cerebellum with autopsies, I have observed loss of posture sense without impairment of general sensibility. In one of these cases the loss of posture sense was practically absolute, and the tumor was found to involve the middle lobe and superior peduncles, pressing also on the corpora quadrigemina. In the other two cases the loss of posture sense, while not nearly so marked as in the case related, was yet decided.

The case of hemiplegia, quoted above, would seem to indicate that the course of the posture-sense fibres is through the anterior portion of the posterior third of the posterior limb of the internal capsule, occupying a position intermediate between the motor and sensory fibres.

In the case alluded to the anterior part of the posterior third was markedly softened, and presented a characteristic worm-eaten appearance, and, as the later history of the case showed, there was enough involvement of the sensory fibres to produce hyperæsthesia on the opposite side of the body, while motion on the opposite side of the body was destroyed, as was also the posture sense.

It remains finally to consider the probable centre for posture-sense impressions, and here speculation is most rife.

Following Ferrier and his school, we should place this centre in the hippocampal lobe. This, however, would be assigning to it a closer relationship to general tactile sensibility than the facts of the case would seem to warrant. If there is one thing certain about the posture sense it is that it exists independently of general tactile sensibility. A far more reasonable supposition, it seems to me, is to consider this centre to be in the closest possible relationship with the motor centres. We have seen how very important this knowledge of the exact position of our limbs must be in view of muscular action. Hence I should be inclined to place the centre for the posture sense either in the convolutions contiguous to the parietal convolutions, or what seems still more reasonable, in one of the several distinct layers of cells which go to make up the cortex of the motor area. Some slight confirmation of this view is obtained from the operations performed by Horsley and others upon the cortex for Jacksonian epilepsy. As a result of these operations there was more or less loss of posture sense in the part whose motor centre was excised. Much more clinical and pathological evidence is needed upon this point, however, before any decision can be arrived at.

The conclusions which may be drawn from the foregoing remarks may be summed up as follows:

1st. The posture sense is composed of afferent impulses derived from muscles, tendons, articulations, and their coverings and bones.

2d. It is independent of and separable from general tactile sensibility, and possibly can be distinguished from the other members of its class, as the pressure sense, for example.

3d. The course of these impulses through the cord is almost certainly by means of the posterior columns.

4th. They probably pass into the *corpus restiforme* and cerebellum.

5th. In all probability they pass through the anterior portion of the posterior third of the posterior limb of the internal capsule, occupying an intermediate position between the motor and sensory fibres in this region.

6th. Without positive data on either side it would seem most probable that the centre for the posture sense is located in one of the cell layers of the motor cortex.

819 N. CHARLES STREET.

SOMNAL.

O. M. Meyers, M. D. (Med. Record, March 12, 1892) from a clinical and experimental study of the physiological and therapeutic action of somnal, draws the following conclusions; Locally it is non-irritant, exerting a rather stimulating effect on the gastric mucous membrane. Applied directly to the frog's heart it destroys its electro-excitability. Therapeutic doses do not weaken the heart. Toxic doses depress that viscus: (*a*) by direct action on the muscle; (*b*) by stimulation of the cardio-inhibitory centres. After therapeutic doses there may be slight primary rise in arterial tension, which soon returns to normal, or may fall below. Toxic doses rapidly diminish pulse rate and pressure. Ordinary doses cause the respiration to become slow and full. Toxic amounts induce rapid, shallow, and irregular respiration; the result of depression of the respiratory centre at base of brain. As in therapeutic doses sleep is induced without perceptibly affecting any other portion of the economy, it is fair to conclude that somnal acts directly and primarily upon the cerebrum. A. F.

REPORT OF A CASE OF MUSCULAR ATROPHY, WITH PATHOLOGICAL FINDINGS IN SPINAL CORD.[1]

By W. H. RILEY, M.D.,
Battle Creek, Michigan.

THE patient was an American by birth, traveling salesman by occupation; age forty-four; came under my care for treatment of weakness in lower limbs, and gave the following history:—

His father had epilepsy when a boy, and again in old age. There was no history of rheumatism, syphilis, gout, or other chronic disease in the case. Habits good. He had been exposed some to the inclemency of the weather in his occupation as a traveling salesman for some years. His present trouble began about nine months ago, at which time he noticed a tendency on the part of the toes to drop and drag on the ground when walking. This was first noticed in the left leg, and in a few weeks in the right. The weakness of the muscles on the anterior of the leg increased, and others became affected, until at the time of my examination the patient was obliged to use crutches to get about. He also complained of a twitching of the muscles of the legs and trunk. He had never had any pain since this trouble began, and had not discovered any loss of sensation in the limb or any other part of the body. He tired easily on the slightest exertion, and had lost several pounds in weight since the beginning of the present trouble. Examination revealed a decided weakness in the flexors of the ankles and extensors of the toes. This was more marked in the left than in the right limb. There was also weakness of all the other muscles of the lower limbs. The muscles of the trunk were affected to that extent that it was with difficulty that the patient could rise from a horizontal to an upright position. At the time of examination there was no apparent weakness or wasting of the muscles of the upper extremity. There was a distinct fibrillary twitching in the muscles of the legs and trunk. This was constantly present. The knee-jerk was absent in both limbs, and there was no reflex action from stimulation of the skin in any part of the legs. Electrical examination showed the faradic irritability of the muscles of the anterior of both legs diminished, particularly those of the left side. A. Cl. C. equals C. Cl. C., in the peroneal muscles of the left leg. The sphincters were not involved. Sensibility to touch, pain, and temperature were normal, and there was no affection of the organs of special sense—hearing, vision, taste, and smell were all normal. Physical examinations of the heart, lungs, and abdominal viscera revealed nothing abnormal. Digestion, with the exception of constipated bowels, was fairly good. Diagnosis of progressive muscular atrophy was made, with an unfavorable prognosis.

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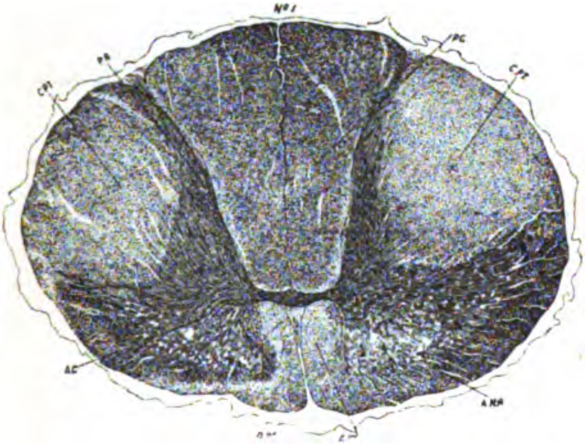
[1] Presented at the meeting of the American Neurological Association, New York, June 22, 23, 24, 1892.

The patient was placed under treatment, consisting of massage, faradization, and galvanization of the muscles, together with the continued application of heat to the spine for one hour daily, and a galvanic current of forty milliampères being passed directly through the spinal cord three times a week. Plenty of fresh air, sunshine, a nutritious diet, and rest in bed, with a little exercise, were prescribed. Under this treatment the patient got along comfortably for about two months, but made no improvement. The next month he seemed to grow gradually weaker, and at this time there was noticed a weakness and wasting of the thenar muscles of the right hand, which was soon followed by weakness and wasting of the corresponding muscles of the left hand. At the end of three months the patient was obliged to take his bed. There was a gradual progress of the disease. The wasting and weakness of the muscles first affected became extreme in degree, while new muscles were constantly being invaded by the morbid process. The diaphragm was finally paralyzed, and respiration was carried on by the thoracic and intercostals, and by the so-called muscles of "extraordinary inspiration." At this stage of the disease the patient was extremely emaciated and entirely helpless. During the last three or four weeks of the disease the temperature varied from 98° to 100.8° F., pulse 120 and very weak. The amount of urea excreted daily gradually diminished during the progress of the disease, and a few days before death was about half in quantity to that excreted when the patient was first examined. Oxalates and phosphates of lime were present, and gradually increased in quantity. Fibrillary contractions in the muscles was a prominent symptom throughout the disease, nearly all the muscles being in a constant state of agitation and activity. The thoracic muscles, the scaleni, and the sterno-cleido-mastoid muscles of the neck, upon which the respiratory movements were entirely dependent at this stage of the disease (the diaphragm being entirely paralyzed), grew weaker and weaker, and the respiratory movements were only carried on with the greatest difficulty. The patient finally died on February 22d, about one year from the onset of the disease, the immediate cause of death being paralysis of the muscles of respiration.

Post-mortem examination was made. The muscles of the body were found shrunken and atrophied. There were streaks of light tissue through them, indicating a degeneration of the muscular fibre itself. There seemed to be no change in the internal organs, either abdominal or thoracic, except a general atonic condition of the tissues. The brain and spinal cord were examined. The brain appeared to be healthy. Microscopical examinations were made of the cord in the lumbar, dorsal, and cervical regions. These sections were hardened, and stained with Weigert's stain. The anterior cornua of the gray matter did not take the stain as readily as the posterior. There was a granular, broken-down appearance in the anterior horn, with the total absence of many of the motor cells. There was also a degeneration of the anterior root fibres, in many cases amounting to a complete absence of the nerve fibres. The crossed pyramidal tracts were markedly changed. Many of the fibres in the crossed pyramidal tracts seemed to be absent, and there appeared to be an increase in the connective-supporting tissue. The direct or anterior pyramidal tracts were affected in a similar manner, although the pathological changes were not so marked in this region. The degeneration was not confined definitely to the pyramidal tracts, but extended out to the so-called mixed zone, and affected fibres which probably connect motor cells at different levels of the cord. For illustration of the described changes in cord, see Figs. 1, 2, 3.

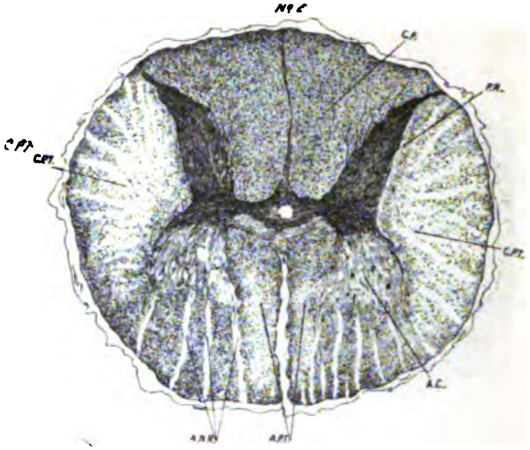
The important point to which I wish to call your attention in this connection, is the seat of the pathological lesion in the cord; that is, that it was not confined to the lower segment of the motor path. Although there were no symptoms of any disease in the pyramidal tracts or the upper segments of the motor path, yet in this case there was a distinct and decided degeneration of the pyramidal tracts.



Section No. 1—Cervical Cord.

C. P. T. = Crossed pyramidal tracts, showing some degeneration of motor fibres.
D. P. T. = Direct pyramidal tracts, with slight changes.
A. C. = Anterior cornu, broken and having a granular appearance, with absence of some motor cells.
A. N. R. = Anterior nerve root fibres degenerated.
P. C. = Posterior columns, healthy.
P. R. = Posterior root, healthy.

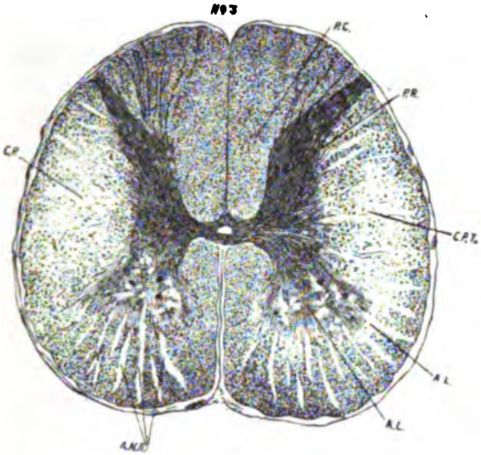
There is a class of cases coming under this head, the so-called amyotrophic lateral sclerosis of Charcot, in which we have weakness of the legs, with excessive myotatic irritability, while the muscles of the upper extremities are paralyzed and atrophied. The seat of the pathological changes in this class of cases is, as is well understood, in the anterior horn of gray matter of the cord, and the pyramidal tracts, the condition in the legs being explained by the changes in the pyramidal tracts, while the paralysis with atrophy of the upper extremities is due to changes in the anterior horn of gray matter and motor nerves of the cord. But the case under consideration does not come in this division. There were no symptoms during life indicative of any disease in the pyramidal tracts, or in the upper segment of the motor path; yet post-mortem examination showed these to have suffered from the morbid process.



Section No. 2—Dorsal Cord.

C. P. T. = Crossed pyramidal tracts, markedly degenerated.
A. P. T. = Anterior pyramidal tracts.
A. N. R. = Showing absence of nerve root fibres.
A. C. = Anterior cornu. Absence of many motor nerve cells, broken-down granular appearance.
P. C. = Posterior columns, having a healthy appearance.
P. R. = Posterior root, healthy.

The result of microscopical examination of the cord in this case, would then indicate that the seat of the lesion in the spinal cord in *atonic muscular atrophy* is not in the motor cells and motor roots only, but includes the pyramidal tracts as well. Gowers, of England, has recently shown that in these cases of *atonic muscular atrophy*, it is a very common occurrence to find the pyramidal tracts degenerated, not in the spinal cord alone, but this degeneration extending up through the pons and crus into the internal capsule of the brain, and in some cases there was also a degeneration of the motor cells in the cortex of the brain.



Section No. 3—Upper Lumbar Region.

C. P. T. = Crossed pyramidal tracts, degenerated.
A. C. = Anterior cornu, absence of motor cells and broken-down granular appearance of gray matter.
A. N. R. = Shows absence of anterior nerve root fibres.
P. R. = Posterior root, healthy.
P. C. = Posterior columns, healthy.

Much might be said pro and con as to the seat of the primary lesion, whether in the pyramidal tracts or in the gray matter of the cord; of the possibility of the changes in the pyramidal tracts being secondary to those in the motor cells of the cord; or of the disease of the lower segment of the motor path being secondary to the pathological changes in the pyramidal tracts.

We notice in this particular case that the changes in the pyramidal tracts and the gray matter of the cord seem to be of about equal intensity in the same section of the cord. In the lumbar region of the cord, where the motor cells were almost entirely destroyed and the anterior root fibres nearly absent, we find also a marked degeneration of the pyramidal tracts; while in the cervical region of the cord, which had to do with the muscles last paralyzed and wasted, the changes were not so extreme, and were of equal severity in the pyramidal tracts and motor cells of the cord. This would seem to indicate that the morbid process began in both pyramidal tracts and gray matter simultaneously, or at all events nearly so. The analysis of this case inclines us to the opinion that has before been expressed by Gowers, that *atonic muscular atrophy* is not an expression of disease and decay of the lower segment of the motor tract alone, but is, in many cases at least, an expression of the tendency to degeneration and decay of the whole motor path from the cortex of the brain to the muscles.

ON THE EFFECTS OF CHLOROFORM.

(British Med. Journal, Nov. 21, 1891.) L. E. Shaw, M.D., gives an account of some experiments made by Dr. Gaskell and himself which were in accordance with those of the Hyderabad Commission. They show that when chloroform is administered without interfering with perfectly regular respiration, complete insensibility can be produced without obvious weakening of the heart's beat. Inefficiency of the heart is brought about by the rapid inhalation of chloroform in too concentrated a form. The practical teachings are that it should be administered slowly and with plenty of air, and that great care should be taken not to push the chloroform when struggling or gasping respiration occurs. A. F.

PROGRESS IN THE CARE AND COLONIZATION OF EPILEPTICS.[1]

BY FREDERICK PETERSON, M.D.,
Chief of Clinic, Nervous Department, College of Physicians and Surgeons.

DURING some years' residence as First Assistant Physician at the Hudson River State Hospital for the Insane, I became deeply impressed with the necessity of separate provision for epileptics. I had in the neighborhood of thirty or forty epileptics under my charge, some of whom could scarcely be called insane, although legally committed as such, for the reason that there was no other sort of hospital which would receive them. I noted at the time the unpleasant effects such patients would often have upon my other patients who were convalescing from various forms of insanity, and I believed it wrong in every way that cases of mental disease should be subjected to intercourse with persons who were often peevish and disagreeable and mischievous, and who also often caused general excitement and distress by falling in convulsions in the wards or in the sitting-rooms, or at the tables at meal time. Afterward I grew to feel the need of separation on their own account. I saw that something had been done for the care or improvement in greater or less degree for almost every defective class, for the insane, for idiots, for the deaf and dumb and blind, for the sick and the crippled, for the aged and infirm, for young malefactors in reformatories, for the negro and for the Indian. But the sufferer from epilepsy had been left to shift for himself, often an outcast from his family, usually expelled from the schools, denied industrial employment, shunned to a great extent by his fellows, left to grow up in ignorance and idleness, companionless and friendless, a prey to one of the most dreadful and hopeless of maladies, refused admission to general hospitals, and only at last given refuge in either an almshouse or insane asylum.

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[1] Read before the American Neurological Association, June 22, 1892, and before the Association of Superintendents of the Poor of New York State, at Utica, August meeting, 1892.

He was driven to find shelter in an asylum, not, as a rule, because he is deprived of reason, but because there is no other place for him to go. There are thousands of epileptics in insane asylums to-day who do not belong there, for many will be found among them who are not insane, and it is an injustice to them as well as a detriment to the insane, to associate the two classes.

The question of separate provision for epileptic patients deserves, therefore, at our hands particular consideration, since, from the peculiar nature of the disease, it involves not only their treatment by skilled experts, but also their education for the ordinary pursuits of life; for epilepsy is a remarkable malady. It robs the victim of his mental and physical powers for a comparatively small period of time, sometimes but for a few minutes in a week or a month, and at the most but for a limited proportion of the patieut's daily activity. It is not a continuous disease; and terrible as are the few moments of fainting and spasm that come upon the sufferer unexpectedly, they do not necessarily incapacitate him for all of the duties and pleasures of life.

It is, indeed, true, that in the course of years epileptics may become mentally enfeebled by the frequent recurrence of these seizures; but this is often due not so much to the ravages of the malady itself as to the unfortunate social conditions to which the invalid becomes subject. His attacks do not permit of his being among his fellows in school, and when he has grown to manhood no one will give him employment. He cannot go to church, he is excluded from the schools, no one will bear him company, work is denied him, and as he grows in years he is a burden to his family. Small wonder, then, that he degenerates morally, that his intellect is stunted, that he learns no trade, and that he finally drifts to the only places that our public charities afford him for shelter, to almshouses and insane asylums, where the hapless creature sinks into deeper apathy and profounder mental decay.

This is no overdrawn picture, nor does it concern a very limited number of persons. There are at this present moment over 1,000 epileptics who are inmates of insane asylums and almshouses in this single State of New York; and there are many thousands more in the State who, more fortunate than their brethren, are, through the help of friends and relatives, or because of the infrequency of their attacks, permitted to support themselves or to remain in their families. It is estimated that there are fully 120,000 epileptics in the United States.

There is but one kind of institution which can meet the case of those who suffer from this disease. No asylum, no large hospital, no single vast building in a great city, is appropriate for the purpose. It must be an establishment combining many unusual features. It must have schools and teachers for the education of the young epileptics; it must have offices, shops of all kinds, stores, dairy, farm, gardens, granaries, for as they grow up these patients should acquire trades or professions; it must have a group of small hospital and asylum buildings where such as are sick or mentally infirm may be cared for; it must have skilled physicians; it must have a church, a theatre, a gymnasium, and a bathing establishment; it must have, finally, a pathological laboratory presided over by the keenest pathologist obtainable, so that in the course of time a cause and a cure may be discovered for this terrible disease. Such a place would not be a hospital in the ordinary sense of the term; it would be a village in itself, a colony for epileptics.

In 1886 I was granted a leave of absence for some months from the Hudson River State Hospital, to spend in the examination of European Hospitals and Asylums,[2] and among these institutions one interested me above all others, viz., one that seemed to realize my ideal of what separate care of the epileptic should be—the colony for epileptics at Bielefeld, in Hanover, Germany. As soon as I returned home I published a description of it in the *N. Y. Medical Record* for April 23, 1887, afterward elaborating it in the *Journal of Nervous and Mental Disease* for December, 1889.

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[2] Some European Asylums: Am. Journal of Insanity, July, 1887.

This deservedly famous colony was founded some twenty-six or twenty-seven years ago by a Lutheran clergyman, Pastor von Bodelschwingh, who by the way is not only known for this wonderful charity, but stands in high repute among social economists for his attempts to rescue the tramp in his *Arbeiter-Colonien.*

This wise and beneficent man began his epileptic colony with four patients on a small farm near Bielefeld. To him, as to others doubtless also, had occurred some of the ideas mentioned above, and he determined to carry out practically his conceptions of what proper provision for this class should be.

It seemed to this benignant man that it was feasible to create a refuge where these sufferers might be cured, if curable; where their disease might be ameliorated, their intellectual decay prevented; where they might have a comfortable home if recovery were impossible; where they might develop their mental faculties to the utmost; might acquire trades, or engage in whatever occupation they cared to choose; finally growing into a community of educated, useful, industrious, prosperous and contented citizens. From that small beginning there has been a gradual evolution and expansion of the colony. In 1878 it had 250 epileptics; in 1880, 458; in 1882, 556; in 1886, 830; and at the time of this writing considerably over 1,200.

During the twenty years from 1867 to 1887, 2,407 epileptics had been received and treated at the colony. Of these 156, or 6½ per cent., were discharged recovered, and over 450 improved.

One of the chief features of the colony is the system of decentralization, the division of the patients as much as possible into small families, occupying cottages, the separation of the sexes, of the feeble-minded from those with normal mental faculties, separation according to age, social standing, former occupations, etc.,—a system likewise applicable, I may say, to the insane in the ideal psychopathic hospitals of the future, and already to some extent applied in the Saxon institution Alt-Scherbitz, and in the new *Manicomio di Roma.*

For the purpose of securing a sufficient number of male and female nurses, and of a superior order of kindly and sympathetic care, it was deemed expedient to found at the Bielefeld colony also nurses' training schools, and as a result of this, not only have they well-trained brothers and sisters forming an order of deacons and deaconesses for their own use, but they have been enabled to supply various hospitals and insane asylums with a high class of care-takers. For my own part, and from my experience in institutions, I shall always feel that the highest order of care and nursing for such unfortunates as the insane and epileptics can only be obtained by the employment of those who enter upon these most arduous of duties from a deeply religious motive.

When I visited it it consisted of fifty-five houses and cottages scattered in pretty gardens over some three hundred and twenty acres of beautiful woodland and meadow. It was like a country village.

Here schools are to be found in which instruction is given in all the branches usually taught in ordinary public schools, and opportunities are afforded for even higher studies in the languages, arts and sciences for those who desire them.

Here are stores and shops of many kinds, such as a seed store, grocery, drug store, joinery, bakery, tailor shop, paint shop, locksmith shop, blacksmith shop, foundry, tin shop, shoe shop, saddlery, dairy, brickyard, printing office and bookbindery. Floriculture, agriculture and fruit-raising require large numbers of epileptic employees.

Some of the houses have been planned by epileptic architects, the brick made by sixty epileptic patients at the brick-kiln, the masonry done by epileptic workmen, the woodwork made by their own carpenters, the iron work by their own smiths, the painting, glazing furnishing by their own adepts in these various trades.

For men alone there are over thirty different callings.

The women are busied with the manifold cares of the households, manufacture of wearing apparel and bed-linen, and the rearing of flowers and garden-produce.

Thus it will be seen how nobly philanthropic has been the conception and carrying out of this project. And it is not only in the multiplicity of occupations that the genius of its conceiver has been made manifest, but also in all those avocations that tends to divert the minds of the patients from contemplation of their misfortunes. Games and amusements are many; walks in the groves and gardens; out-of-door sports; evening entertainments; singing schools; an orchestra made up from their own number; a museum for the collection of stamps, coins, gems, autographs, bronzes, antiquities, articles of ethnographic or historical interest, and specimens from the animal, vegetable and mineral kingdoms—all have been carefully thought out for the perfect evolution of this little social world.

When the evil disorder attacks one in the field or garden, willing hands are near to attend to him, and every workshop and schoolroom has its cushions within convenient reach on occasions of emergency.

Taking the Bielefeld colony as a model, nine other epileptic colonies have been established in Germany, one in Holland; one in Switzerland; and one institution for epileptics was created by a French clergyman, John Bost, near Lyons, in France, some forty years ago, but it has not the model village character of that of Bielefeld.

Up to the time that I began the propaganda for such an establishment on the colony, or at least villa system, in April, 1887, absolutely nothing had been done for the special care of this class of dependents in this country—either privately or by State authorities, but it is fair to say that as long ago as 1869 the Board of State Charities of Ohio had the matter in mind and wrote thus in their second annual report:

"In view of the foregoing statements—for the sake of the epileptics as a class, as well as for the sake of their immediate friends and society at-large—the Board feel that some provision ought to be made whereby the comfort of the one and the safety of the other could be secured. . . . An asylum consisting of a farm, ample in size and productive in character, upon which plain, neat and substantial pavilions might be erected, under the general direction of an accomplished agriculturist and of good administrative ability, aided by efficient skill and competent foremen and attendants, would fully meet the demand."

In 1890 Governor Campbell appointed a committee to select a site and prepare plans for an institution for epileptics, and this commission visited me in New York in that year for suggestions as to these matters. On Nov. 12, 1891, General Brinkerhoff, President of the Ohio Board of State Charities, laid the corner-stone of the first special separate State Hospital for epileptics in this country at Gallipolis. Here a good farm site had been selected and plans for a model institution on the pavilion plan have been made, in which as many of the ideal details mentioned above as possible have been carried out.

The Board of Trustees of the California Home for the Care and Training of Feeble-Minded Children, at Santa Clara, has caused to be erected the first of a series of separate pavilions for epileptics (Sixth Annual Report for the year 1890, by Dr. A. E. Osborne).

Massachusetts and Pennsylvania have also interested themselves in the movement.

In New York excellent progress has been made. In 1890 I was able to secure the influence of the N. Y. State Charities Aid Association, and Dr. Jacoby and myself were appointed a sub-committee to report to that body upon the subject of State Provision for Epileptics. From this report I make the following abstracts:

Of the various plans which have been suggested as useful for the care of epileptics, the following only are worthy of consideration:

(1) The creation of special colonies.

(2) Special hospitals for epileptics.

(3) Epileptic wards in existing insane asylums.

It has been practically shown that the first mentioned of these plans is not only the most feasible one, but can be made to fulfill all legitimate demands.

That hospitalization is impracticable is the opinion of all who have investigated the subject; those epileptics who are only slightly affected by their disease will not remain in a hospital without occupation and systematic employment, and those who are severe sufferers with marked mental affection cannot be kept there. Even the care of simple epileptics without any insanity differs greatly from that of any other class of patients, and makes their care in any hospital a difficult matter. With the organization of epileptic wards in general asylums matters are in the same unsatisfactory condition. The plea of certain supporters of the asylum system, that every epileptic should be legally placed in confinement, because he is either insane or may become so eventually, is a plea which is contrary to every principle of right and wrong. If a hospital for epileptics were consolidated under one management with an asylum, it would be necessary to make a distinction between temporarily mentally deranged epileptics and purely convulsive ones, a distinction which is decidedly artificial, as thus the temporarily mentally disordered epileptic would be constantly transferred from hospital to asylum and from asylum to hospital. On the other hand, the entire question can be solved by the creation of colonies, the admission to which is not to be regulated by the mental condition of the patient, but in which after admission a classification could be made of those afflicted with severe mental defects, of those who are able to work, and of those requiring education. Further classification, according to general aptitude, frequency of attack, temperament and educational status, would, of course, be advisable. The main principles to be observed in the organization of such a colony would be:

(1)—Land.—To consist of at least 200 or 300 acres of farm and woodland, well adapted to agricultural and horticultural pursuits. This land should be situated near a large city, not only on account of convenience of access, but on account of facilities for obtaining expert advice and study.

(2)—Small buildings, cottages.—These to be arranged into separate divisions for the male and female patients; each of these divisions to make provision in separate cottages for the demented, the feeble-minded, the convalescents, the school children, the workers and private patients of the higher classes.

(3)—Larger buildings.

(*a*)—A hospital or infirmary for the sick, injured and mentally affected, Every patient, without exception, should be placed under medical care, and at least a systematic attempt should be made to cure the disease.

(*b*) An educational building for epileptic children.

(*c*) Workshops for adult epileptics.

(*d*) Farm buildings, dairy and granaries.

(*e*) A special laboratory for the study of epilepsy by an expert pathologist.

The State Commission in Lunacy in their third annual report spoke very favorably of the subject, and although a bill failed to pass the New York Legislature in the winter of 1890 and 1891, I am happy to say that this last spring a law has gone into effect giving power to the State Board of Charities to select a site and prepare plans for the establishment of such an institution as is required by these wards of the State. The following is the law in question:

HOSPITALS FOR EPILEPTICS.

CHAPTER 503 OF THE LAWS OF 1892.

AN ACT providing for the appointment of a Commission to locate an institution for epileptics in the State of New York.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. The Commissioners of the State Board of Charities are hereby directed to select a suitable site in the State of New York, on which to establish an institution on the colony plan for the medical treatment, cáre, education, and employment of epileptics.

SEC. 2. The said Commissioners of the State Board of Charities shall have power to receive by gift or to contract for the purchase of such site for the location of buildings of said institution, subject, however, to the approval of the next Legislature, to whom they shall report their action in the premises within ten days after the commencement of the session, together with plans and estimates for constructing buildings suitable for the purpose named in section one of this act; such site to include not less than three hundred acres, and such plans to provide for the accommodation of six hundred inmates and to admit such further extension of the buildings as may be necessary to meet future requirements of the State in providing for the epileptics.

SEC. 3. The said Commissioners shall be entitled to the payment of their traveling expenses while engaged in the performance of their duties under this act, and their account for such expenses shall be audited and paid out of the treasury, but they shall receive no compensation for their services. And the sum of one thousand five hundred dollars, or so much thereof as may be necessary, is hereby appropriated out of any moneys in the treasury not otherwise appropriated, payable on the warrant of the Comptroller, for the purposes of this act.

This act shall take effect immediately.

Thus within a very short period of time a great advance has been made, and soon the hundred thousand and more epileptics of this country who hitherto have had none of the advantages of their brethren in the social struggle for education, livelihood and happiness will rejoice in the existence of several places where they can learn trades, acquire knowledge, be treated, perhaps be cured of their malady, and in any event have a pleasant asylum wherein to spend the years allotted to them. Who knows what benefit some of them may not confer in return upon humanity? These new opportunities given them may well bring out in time talents and even genius that otherwise might have fallen into fatuity and decay.

Although it is not given to every epileptic to describe his own sufferings as Dostoiewsky does in his novel, "The Idiot," or to delight the world with music as did the epileptic Handel, or with comedy as did Molière, or with poetry as did Petrarch, or with military exploits as did Cæsar and Napoleon, or with religion as did Mahommed and St. Paul, still it is a consolation to those afflicted with this malady to know that epilepsy and genius may co-exist, and that the possession of the disease does not necessarily lead to mental or moral degeneration. The patient may not reach the highest position among mankind, but under the new dispensation he will not be debarred from any attainment in education, nor prevented from exercising all of his capabilities for his own support and for his own welfare and happiness.

LITERATURE OF THE SUBJECT.

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State Care for Epileptics. By Frederick Peterson, M.D. "New York Sun," January 11, 1891.

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Outline of a Plan for an Epileptic Colony. By Frederick Peterson, M.D. "N. Y. Medical Journal," July 23, 1892.

Other articles by Drs. J. Madison Taylor in the "Univ. Med. Magazine," and by Drs. W. N. Bullard and L. W. Barber have appeared recently.

JACKSONIAN EPILEPSY, CONVULSIONS BEGINNING IN THE LEFT ORBICULARIS PALPEBRARUM AND EXTENDING TO THE LEFT HAND AND ARM—APOPLECTIC CYST FOUND BENEATH THE UPPER FACE CENTRE AND DRAINED—NO RECURRENCE OF CONVULSIONS.[1]

By HOWELL T. PERSHING, M.Sc., M.D.,

Lecturer on Mental and Nervous Diseases in the University of Denver; Physician to the Arapahoe County Hospital and to St. Luke's Hospital, Denver.

ON Feb. 18, 1892, I was asked by Dr. Bradner and Dr. John Boice, of Denver, to examine Charles P., aged twenty-seven.

In April, 1891, the patient, a robust young man, was struck on the right side of the head with a billiard cue. He did not lose consciousness, but immediately felt weak and numb on the left side of the body. The blow occurred at 1 A. M. A physician was called at once, and ordered absolute rest with an ice-bag to the head.

Unfortunately an officious friend called another practitioner, who removed the ice-bag, wrote a prescription and allowed the patient to get up. The patient then went home with a woman and spent the rest of the night with her.

Getting up at 10 A. M., immediately after intercourse, the left arm and leg were suddenly paralyzed, the paralysis being complete in the arm and nearly so in the leg. The face was not noticed. Consciousness was not lost, but for a day the patient was somewhat irrational and his speech was thick and clumsy. Improvement in the leg was apparent at the end of three days. Three weeks after the paralysis he could walk with a cane, and, for the first time, could move his fingers. At the end of six weeks the leg had entirely recovered, and in three months the arm was well. He then went to work.

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[1] Presented to the American Neurological Association at the meeting in New York, June 22, 23 and 24, 1892.

One night toward the end of July the left eye suddenly began, as he expressed it, "to open and shut." In alarm, he called for a lamp to be lighted, but before this was done the spasm was over. No other part of the body was involved, and there was no impairment of consciousness. A week later, while at work, this forcible twitching of the eyelids came on again, and was immediately followed by numbness of the left hand, but without spasm. He was worried by the occurrence, but went on with his work. About ten days after this there was a similar attack.

In the latter part of August the fourth attack occurred. It began as usual with clonic spasm of the orbicular muscle of the left eye; then the left hand became numb; a spasm now began to flex the left fingers, and extending upward in orderly succession, flexed the wrist and elbow and adducted the arm. Then the head was drawn violently down upon the left shoulder, and it seemed to the patient as though the blood were rushing through his body and he were turning a great somersault. It was a horrible and painful experience. He gasped and frothed at the mouth, but did not bite the tongue nor lose consciousness. After the attack he was dull, stupid and weary.

Attacks, all substantially like this, recurred at intervals of one to three weeks until November, when a physician at Silverton, Colorado, made an opening in the skull one inch long and half an inch wide, on the line of the coronal suture, the lower end of the opening being one centimeter above the temporal ridge. The dura was apparently not opened, and the lesion was, of course, not reached. Three weeks after this operation a convulsion occurred and others followed.

On Feb. 9, 1892, spasm of the eyelids and numbness of the hand gave warning of a beginning attack. In terror, the patient began to run around, then he lay down for a moment, but, jumping up, rushed to a hydrant and drenched his head with the cold water, when he returned to his normal condition, the arm not having been convulsed. A week later, however, there was a complete attack.

Status præsans, February 18, 1892: The left orbicularis palpebrarum and the left zygomatici are distinctly paretic. The forehead wrinkles evenly on the two sides, and the tongue is protruded in the median line. In the limbs muscular power is normal. The tendon reflexes are normal throughout. No defect in touch, pain, temperature or posture sense can be detected. Smell, taste, hearing, central vision, the visual fields and the eyegrounds are normal. The patient thinks that his memory is poorer and that he is more easily confused than formerly.

A diagnosis was made of a lesion (probably a clot left by the hemorrhage which caused the hemiplegia) irritating the cortical centre for the upper part of the face, and an operation was advised. This was done Feb. 27, 1892, at St. Luke's Hospital, Denver, by Dr. Boice.

The scalp, having been shaved and disinfected, the upper end of the fissure of Rolando was located at a point 55.7 per cent. of the whole distance from glabella to inion back of the glabella. This was just 5 c.m. back of the bregma. From this point the line of the fissure on the right side was drawn downward and forward, making an angle of 67° with the median line for a length of 5.6 c.m. and continued 3 c.m. further in a line a little more nearly vertical. The course of the inferior pre-central sulcus was indicated by a line 4 m.m. back of the coronal suture; that of the inferior frontal sulcus by a line a few millimeters above the temporal ridge and parallel to it.

The centre for the upper part of the face, which was to be exposed, lies between the fissure of Rolando and the inferior pre-central sulcus, just below the line of the inferior frontal sulcus, continued backward, which separates it approximately from the centre for the fingers lying immediately above.

A one and a quarter inch trephine was applied on the temporal ridge back of the coronal suture, and the opening thus made further enlarged with forceps. The dura bulged tense into the opening and did not pulsate. It was opened by a crucial incision and a little fluid escaped. No convolutions could be made out, but over the centre for the upper face, as indicated by the map on the scalp, the pia was of a yellowish brown color and seemed thick and opaque. This we took for the anticipated clot, but, on gently pulling on it with the forceps, it tore, and a gush of clear straw-colored fluid showed that a cyst had been opened. As soon as the fluid had escaped, its walls were brought together by the pressure of the surrounding brain substance, but it readily admitted the fore-finger, which it loosely fitted, for a depth of 4 c.m. Its orifice at the surface was directly under the temporal ridge and 2 c.m. back of the coronal suture, and its cylindrical cavity extended inward toward the external auditory meatus of the opposite side, apparently parallel to the pyramidal fibres. The cyst-wall was yellow and glistening, streaked irregularly with bluish-black lines. It was soft, and easily torn. The normal pulsation of the brain was visible as soon as the cyst was emptied.

The removal of the cyst-wall not being practicable, a small rubber drainage-tube was doubled and carried down to the bottom. The dura was closed with fine catgut sutures and the corners of its flaps were stitched to the cyst-wall. No bone was replaced. The scalp wound was closed and dressed in the usual way, the drainage-tube having been brought out at its lowest point.

The operation was completed at 2 P. M. The administration of sodium bromide was begun as soon as the patient had recovered from the ether and has been continued. At 6 P. M. the temperature was 98°. He complained of some headache and general soreness, but otherwise felt well. Paresis of the zygomatici was decidedly more marked than before the operation, but the tongue was protruded in the median line and the grasp of the left hand was good.

On the following day the temperature was 100°, morning and evening. The patient was able to whistle. The left hand seemed as strong as ever and was used to hold a cup; toward evening, however, it felt rather numb.

On the fourth day the evening temperature was 103°. The left hand was decidedly weaker and could not be used to hold a cup. The morning temperature of the fifth day was 102°, but fell immediately after irrigation through the drainage-tube, In the early morning of the seventh day the temperature was 103°, and the patient was delirious for the first time. Drooping of the left upper lid was noticed.

On the eighth day the ptosis had disappeared and the patient was quite rational, but at night he was again delirious and tore off the bandage. After this there was a steady improvement and the drainage-tube was withdrawn a little at a time. Twenty-four days after the operation the patient left the hospital, to all appearances fully recovered. He has since been taking a mixture of bromide and antipyrin, and up to the last time he was seen, May 27, 1892, there had been no return of the spasms, though he was at first sometimes frightened by a queer sensation about the left eye.[2]

But little comment upon the facts of this case seems necessary. Numbness of the side opposite the blow was proof of damage to the brain, and the vascular strain of intercourse must have ruptured some weakened vessel. As far as localization is concerned, the case is a very satisfactory one, the lesion being found at the precise spot indicated by the symptons. Gowers[3] locates the centre for the zygomatic muscles in the pre-rolandic convolution opposite the inferior frontal sulcus and says that the zygomatici and the orbicularis palpebrarum are usually involved together in cortical lesions. Dr. Berkley,[4] of Baltimore, has reported a case in which a small spot of softening in this situation was the cause of clonic spasm limited to the zygomatic muscles. My patient never observed that the corner of his mouth was drawn at the onset of his attacks, but this may have occurred without being noticed, and the fact that the zygomatici and the orbicularis palpebrarum were involved together in the paresis makes it probable that they were also convulsed together.

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[2] Up to July 15th the patient was still free from seizures.

[3] Diseases of the Nervous System, Philadelphia, 1888, pp. 460, 461.

[4] Cited by Gowers, l. c.

The scar left in the track of the drainage-tube has no doubt bound the scalp and membranes to the cortex at that point, and, as such adhesions are often irritating, we were prepared for the possible necessity of a second operation. Fortunately, the result, so far, is all that could be desired.

ON THE METHODS OF STRETCHING OR EXCISING A PORTION OF THE INFERIOR DENTAL, LINGUAL, AND SUPERIOR MAXILLARY NERVES FOR TIC DOULOUREUX.

W. J. Walsham, F.R.C.S., "British Med. Jour.," Dec. 19, 1891, proposes an operation for the relief of trigeminal neuralgia which he considers superior to others for the following reasons: There is no external wound, no important structure is divided, and no removal of bone is necessary. The parotid gland and articulation of the jaw are not interfered with. The exposure of the nerves is all that can be desired. The wound heals in a few days, and the patient is convalescent from the time he recovers from the anæsthetic. Important points in the operation are a clean incision through the mucous membrane to facilitate rapid healing. The internal pterygoid should be separated from the bone without unnecesary bruising. The periosteum should not be detached from the jaw. Where stetching or excising the supèrior maxillary nerve and removal of Meckel's ganglion is anticipated, he reaches these structures by working through the antrum, chipping away the lower wall of the infraorbital canal and trephining the posterior antral wall. There is said to be no difficulty with regard to the healing of the antral wound. A. F.

Society Reports.

AMERICAN NEUROLOGICAL ASSOCIATION.

Eighteenth Annual Meeting, held in New York,
June 22, 23 and 24, 1892.

The President, DR. C. L. DANA, in the chair; Dr. G. M. HAMMOND, Secretary.

The PRESIDENT, in opening the proceedings, said that in view of the immense amount of work before the session he should waive the usual address. After briefly reviewing the progress of the Association since its inception and brief mention of those members deceased since the last meeting, paying special tribute to the memory of the late Dr. Birdsall, he declared the eighteenth annual meeting open.

RESEARCHES UPON THE ETIOLOGY OF IDIOPATHIC EPILEPSY.

Dr. C. A. HERTER, of New York, read a paper on this subject. It was the aim of the paper to present to the Association the results of a research upon epilepsy that had been in progress during the past winter. The work was originally undertaken with a view to studying the relation of uric acid excretion to the epileptic paroxysm, a line of inquiry brought to notice by recent publications of Haig, an English writer. According to this author, the *grand mal* seizure was determined by an excessive accumulation of uric acid in the blood. In the study of this question the speaker's results were not confirmatory of the view by Haig. Certain observations, however, of another kind had suggested the possibility of a causal relationship, in some cases, between putrefactive processes in the intestine and epileptic seizures. Evidently the planning of a study of this character involved the assumption that the discharge of nerve force from the cortex which constituted the epileptic seizure might be in some way conditioned by the quality of the blood by which the cerebral elements were nourished. The idea that epileptic paroxysms might be related to toxic substances in the blood was not a new one, the clinical aspects of epilepsy being such that they had suggested a dependence of this kind to some authors who had not been satisfied with the purely mechanical explanation of the epileptic seizure. That toxic substances produced in the intestine might sometimes determine the occurrence of epileptic seizures was a possibility that occurred to one on considering that cases of epilepsy in which the symptoms of disordered digestion were associated with an unusual frequency of the seizures. The observations which the author had made upon intestinal putrefactive processes in epileptics were based upon a study of the urine of such cases. Certain substances in the urine, namely, the ethereal sulphates had been shown to be derived from putrefaction in the intestine, and the extent to which such putrefaction occurred might be inferred from the quantity of these substances in the urine. These substances had been studied in thirty-one different cases of epilepsy, most of the cases being unquestionable idiopathic in nature, according to the generally accepted meaning of the term. In the majority of these cases the uric acid excretion also had been studied. The results that had been derived from the inquiry might be presented under the following tables: First. Synopses of the clinical histories of the cases of epilepsy that formed the basis of the paper, together with tabulated results obtained from the analysis of the urine. Second. Conclusions relating to the excretion of uric acid in epilepsy. Third. Conclusions relating to the occurrence of intestinal putrefaction in epilepsy. Of the thirty-one cases of epilepsy, *grand mal* seizures were the distinctive features in twenty-nine. In the remaining cases there were very frequent *petit mal* seizures. In relation to the excretion of uric acid in epilepsy, the speaker's figures showed that before the seizure the excretion had only in rare instances varied from the limits of health. This was true of the cases where the urine just before the paroxysm was examined and of the instances where only the urine for the twenty-four hours preceding the day of the seizure was studied. In general it might be said that the urine passed after a seizure was apt to have a higher uric acid ratio than the urine before or about the time of the seizure. This tendency to a high uric acid ratio after paroxysms was to be regarded as a consequence of conditions which determined the seizures, or possibly to the seizures themselves. The excess of uric acid that was observed in epilepsy could not reasonably be construed as the cause of seizures. The foregoing remarks applied to cases of *grand mal.* In *petit mal* cases a continuously high uric acid excretion had been observed, and appeared in some way to be related to the cause of the seizures. It was found in two cases of this type that when the excretion of uric acid was reduced, the seizures were greatly reduced in frequency. In regard to the conclusions relating to the occurrence of intestinal putrefaction in epilepsy, of the twenty-nine cases of *grand mal,* twenty-one of them showed unmistakable evidence of excessive intestinal putrefaction. Furthermore a large proportion of the cases in which the observations were of such a character as to render a comparison possible, showed at least a general correspondence between the seizures and the degree of intestinal putrefaction as gauged by the analysis of the urine. As regards the possible dependence of these results upon any peculiarity in the diet of the patients, it might be said that no peculiarity existed. The possibility that the results might depend, in part at least, upon the influence of bromides was not so easily to be disposed of. The question really resolved itself into one of probabilities, and it was believed that the following considerations rendered it in the highest degree improbable that the bromides were responsible for the evidence of putrefaction. The quantity of the bromides taken being from twenty to eighty grains per day. Again the evidences of intestinal putrefaction were distinctly greater about the time of the seizures than in the intervals. Also seizures had been controlled by influences which coincidently controlled the products of putrefaction. While the speaker could not claim that epileptic seizures were ever the consequence of abnormal putrefactive processes in the intestine, he had at least obtained evidence which forcibly suggested that epileptic seizures were sometimes the consequence of toxic substances produced in the intestinal canal, and that the formation of these substances was related to processes of a putrefactive nature.

DISCUSSION.

Dr. E. D. FISHER had seen some of the cases referred to, and thought that the clinical facts tallied with the conclusions so far deduced by the author of the paper.

Given an unstable cortex, the speaker saw no reason why such chemical products might not act as the irritating cause of a seizure. In epilepsy, primarily due to a special lesion, such irritation would bring on an attack, and there was no reason why the same should not obtain in idiopathic epilepsy. So far as he could determine the paroxysmal and intraparoxysmal conditions were the same in organic as in idiopathic epilepsy, and putrefactive changes would probably act similarly in both.

In conclusion, he considered this line of investigation of the very greatest importance, conducted as it was in a thoroughly scientific manner.

Dr. J. J. PUTNAM said that such researches went to determine how much more complicated were all these neuroses than was usually supposed.

Dr. HOBSON thought it was a question whether the presence of ethereal sulphates might be regarded as a cause or effect of the epileptic condition.

Dr. RIGGS said that in the use of antiseptic agents he had found the addition of napthol and charcoal to the salicylates and sulphates of bismuth valuable in reducing the putrefactive changes of a nitrogenous diet. He preferred the albuminous proteids in diet as being more easily digested.

The PRESIDENT thought there was no known drug which produced antisepsis of the intestinal contents, and the idea that salicylates did this was drawing upon the imagination.

Dr. H. A. TOMLINSON emphasized the fact that keeping the bowels open and seeing to the proper exercise of the epileptic ensured fewer convulsions and a less uncomfortable existence.

Dr. HERTER replied that as yet no experiments had been made with a view to determining this point, but the evidence suggested a relationship of the kind mentioned, though it was not as yet proven.

He wished it understood as his view that the toxic substances of which he had been speaking operated not by themselves as a cause, but as irritants upon a predisposition. It was important to distinguish between the relation to the epileptic seizure of uric acid excretion and the excretion of the ethereal sulphates. It had been determined by his observations that the proportion of uric acid was largely increased *after* an epileptic seizure, reaching the maximum one or two days after the attacks. The ethereal sulphates, on the contrary, were increased at the time. This fact then suggested a casual relation on the part of the ethereal sulphates or allied mixtures while the uric acid appeared as an effect. He did not think the seizures could have any effect in producing the ethereal sulphates as these were the outcome exclusively of putrefactive changes.

Dr. J. W. PUTNAM read a paper entitled

SLEEP MOVEMENTS OF EPILEPSY. (See page 599.)

DISCUSSION.

Dr. J. J. PUTNAM thought that in epilepsy as a rule the lesion consisted of diffuse sclerotic changes acting diffusely, as did poisons. The focalized expression of these changes indicated only that certain portions of the brain were originally, or had become relatively more irritable than other parts. Operative procedures were not likely to succeed if this theory was correct. He should be disinclined to operate for localized movements occurring during sleep, but thought that Dr. J. W. Putnam's observations were a contribution of much interest to the natural history of epilepsy.

Dr. SACHS thought that sleep movements might point to the fact that the centre governing the part moved in sleep would be more irritable than normal. He was reluctant to attach too much value to the sleep movements as a symptom, but supposed we should now hear much more on the subject than heretofore.

Dr. J. W. PUTNAM had not felt that it would be justifiable to have operations undertaken upon observations of the sleep movements alone. Still he thought they indicated the seat of irritation, and hence there was added one more strand to the rope of evidence.

SEPARATE PROVISION FOR EPILEPTICS BOTH PUBLIC AND PRIVATE.

Dr. HENRY R. STEADMAN, of Boston, read a paper on this subject. He entered a plea for the exclusive care of epileptics in special establishments on the colony plan, throughout the country. He characterized them as the most neglected class of sufferers by disease, and deplored the fact that so much attention had been paid to the pathology and medical treatment and so little to their care and protection. The amelioration of their condition by proper medical supervision, in surroundings where their life could be regulated, and their capabilities in the way of employment developed, seemed not to attract the attention it ought. That this was practicable the colonies for epileptics in other countries, particularly in Germany, amply proved. The dangers to these patients from exposure and accident of various kinds was very great, while the ostracism of many of them from ordinary intercourse with their fellows, from the schools, from places of worship and amusement, and, above all, the fact that they were debarred from obtaining employment on account of the malady, rendered their lot particularly hard. The danger to the community, too, from certain epileptics was also touched upon. The deplorable condition of these unfortunates in almshouses where there were large numbers, in most of the states, could not be too severely characterized. The usual practice of caring for these patients with the insane in lunatic asylums was a great disadvantage to both classes. As the epileptics were not legitimate of such care and prevented the insane from receiving the full amount of attention they should rightly have, while they themselves were deprived of suitable healthful employment. Dr. Steadman also gave a short account, illustrated by charts and views, of the famous epileptic colonies at Bielefeld in Germany which he had recently visited. He closed his remarks with the hope that some step might be taken in this country to establish like institutions.

DISCUSSION.

Dr. BULLARD said that in Massachusetts steps had already been taken to further the establishment of suitable special institutions for the care of epileptics. A bill has been prepared by a special committee and presented to the General Court. It was hoped and believed that next year this bill would be passed and the money forthcoming to secure the end in view.

Dr. FREDERICK PETERSON, who is identified as the pioneer of the present movement, urged the necessity for energetic support of the measures already taken, and said that if hopes were realized the one hundred and twenty thousand epileptics of the United States would have opportunity for education, for instruction in useful trades, and for leading happier lives.

It was now no longer a discussion upon what to do for epileptics in this country, for already California had begun the establishment of an institution for epileptics in connection with the Home for Feeble-Minded at Santa Clara. Ohio, had laid, in November last, the foundation stone for a series of buildings on the pavilion plan, providing schools, a hospital, workshops, etc., for over 1,000 epileptics on a farm of three hundred acres; and New York State has just passed a law appointing the State Board of Charities a Commission to select a site and prepare plans, on the colony system, for this class of defectives at present cared for in our poorhouses and insane asylums. (See paper.)

Dr. FISHER said he hoped the movement would meet with every success. He did not know a more helpless, hopeless set of human beings than these epileptics, fed on bromides, and without occupation. Regular occupation, with medical care, is necessary for successful treatment.

Dr. SACHS was in favor of provision by the State for these patients, but thought that much must be done by private endeavor. There was a well-to-do class among the epileptics most difficult to dispose of. Many of the younger epileptics had no opportunity for proper education. It seemed to the speaker that for these there should be provided private institutions in which special attention should be given to the proper education and manual training of these unfortunate patients.

Dr. Wm. M. LESZYNSKY asked if it was intended to include the care of the cases of chronic epileptic insanity. He should think these formed an undesirable class to colonize with the ordinary epileptics.

Dr. TOMLINSON said there was no more unsatisfactory class of patients in institutions for the insane than the epileptics. Not one of these institutions were suitably equipped to care for them. If they were associated with the violent and demented, their lives were rendered still more uncomfortable. Unless themselves demented, the epileptics were generally alive to their condition and surroundings, and it was from them that complaints generally came. It was very necessary that they should receive special attention. There was always a tendency on the part of this class to eat voraciously. Constipation was a frequent condition, and the auto-infection thereby produced increased the frequency of the seizures. If separate treatment, occupation, and proper diet could be provided, epileptics could doubtless lead more comfortable, and, in many cases, really useful lives.

The PRESIDENT said he had made some investigations in the matter. He did not believe that there should be any State provision for epileptics, at least not at present. There were now an enormous number of defective institutions under political influence. If there were added 15,000 epileptics to the 15,000 insane, the condition of the former class would be by no means benefited. While the institutions for which Dr. Stedman pleaded were undoubtedly needed, effort should be made toward interesting private citizens in their support.

Dr. STEDMAN said that it would of course not be wise to associate the violent cases of epilepsy with those of the milder class. Buildings could, however, be provided in any colony of suitably area where the severe cases could be cared for at a distance from the others. It would not be expedient to take the mild cases from the asylums and leave the worst cases there. He agreed as to the desirability of charitable work in the scheme, but it seemed difficult to effect the desired end in this way from the very great lack of interest in these unfortunate cases, and it was only by State care that there was hope of benefiting them.

The PRESIDENT thought that a direct opinion on the subject by the Association might bear weight with the Legislature, and hoped that some such expression would be formulated.

The following resolution was, on motion of Dr. Stedman, then adopted:

"That it is the unanimous sense of the American Neurological Association that the proper care of the epileptic class, so long delayed, be urged upon the public, upon State authorities, and especially upon all interested in the care of the sick and defective poor, whereby they may be relieved from asylums and almshouses, and may receive the required care in such separate establishments as their deplorable situations demand."

Dr. SACHS read a paper entitled

A FURTHER CONTRIBUTION TO THE PATHOLOGY OF ARRESTED CEREBRAL DEVELOPMENT. (See page 603.)

Dr. MILLS thought it was the general experience of most of those present that there was little new to add to the subject of Dr. Sachs' paper. They were unable to record but few apparent successes. He had reported two cases at certain periods after operation, and in one the result was valueless. In the other the patient, up to the time the speaker had last heard of him, had had no return. Prior to the operation, however, the patient had had but few attacks, and the disease had existed only a very few months. The speaker was suprised at the results obtained by Dr. Sachs from faradization of the dura. He had not done this, except accidently, and then the resulting effects had seemed of a general character instead of localized. He should think faradization of the dura a somewhat uncertain guide.

Dr. ANGELL said he should like to get views as to the probable after-results from pressure. In a case of his there had developed a cerebral hernia, and death resulted. He believed, however, that a more fortunate result might have been looked for if the surgeon had not insisted upon replacing the bone. He did not see the advantage of this over the dense fibrous tissue which forms over the trephine opening, when the button is not replaced.

Dr. J. J. PUTNAM said that in Boston they had had some half-dozen cases of brain operations for epilepsy, all of them terminating in recurrences of the condition. In one case the attacks had remained absent for a year and a quarter, and the patient's general condition had improved. The speaker thought that while on the one hand something ought to be done, in the early stages of fracture of the skull, to remove fragments of bone and possibly diseased portions of the brain, evidence was wanting that epilepsy would be thereby prevented. Taking everything into consideration it did not seem, save in exceptional conditions, and when patients understood that the relief would be but temporary, that operative procedures could be undertaken with any great enthusiasm.

Dr. P. C. KNAPP had not seen any very beneficial results from the treatment. From local injury there might supervene a localized epilepsy, due to changes in the brain, but localized epilepsy might exist with diffuse changes, and he believed that in some of these cases by the time the first convulsion appeared, there might already be extensive changes in the brain itself. He had seen the condition develop after exceedingly slight trauma. The operation under the present method was not formidable and the patients readily recovered, but the hole in the skull must be borne in mind as likely to expose the brain to future injury. It could not be denied that trephining had its dangers.

Dr. SACHS said that the failure to obtain local muscular contractions upon faradization of the dura over the motor area is due to some mistake in the technique. It was a fact that through the dura there could be produced a series of single contractions of just those parts, governed by the centre which had been exposed. In this way the exact distribution of centres could be determined upon the brain of man just as well as upon the brain of the monkey. Dr. Putnam had spoken of localized convulsions due to general changes in the brain. The speaker did not entirely agree with this view, but thought it more likely that a localized convulsion due to localized lesion, though there might exist general changes throughout the brain at the time. It was a question whether operation promised much, even in traumatic cases, unless undertaken in the earliest possible stages. The question of urging surgeons to operate quickly in all such cases was the last straw he now had to cling to. He did not believe the trephine dangerous, and if abcesses of the brain developed there was a mistake somewhere in the surgery. As to what happened after removal of large portions of bone he had occasion to observe in one case in which linear craniotomy was done. Seven months later a second operation was undertaken, the child died, and it was found that an exceedingly dense membrane had formed over the entire opening due to first operation exerting very nearly as much pressure as the bone originally gave. There were no signs of inflammatory changes having been set up in dura or cortex by the first operation.

Dr. F. X. DERCUM, of Philadelphia, asked if there were any facts that would go to prove that the ethereal sulphates were really irritative in their action.

Dr. WHARTON SINKLER, of Philadelphia, thought the paper an exceedingly valuable one. As illustrative of the action of putrefactive changes in producing epileptic attacks, he cited the case of a patient who as a rule had a seizure every month or every two months, but who had found that such attacks could frequently be warded off by active purgation.

Dr. DERCUM said that organic changes were probably set up by the trephine. As to the excision of portions of the cortex, he placed himself in line with the more conservative.

ON THE EXTENT OF THE VISUAL AREA OF THE CORTEX IN MAN, AS DEDUCED FROM A STUDY OF LAURA BRIDGMAN'S BRAIN.

Dr. H. H. DONALDSON, of Worcester, made some remarks on this subject. Vision in Laura Bridgman's case, he said, had been lost in the left eye at twelve years of age. The right cortex was found to be thinner than the left when first examined. Compared over the posterior portion of both hemispheres it was found that on the right side the cortex was thinner over an area which corresponded pretty nearly to that described by Jones as representing the visual area, as determined by study of isolated lesions. A study of cases in which the sense organs had been lost in early life, as in animals where it had been experimentally removed might materially aid in marking the sensory areas.

THE CRIMINAL BRAIN; ILLUSTRATED BY THE BRAIN OF A MURDERER.

Dr. DONALDSON also read a paper on this subject. He said that a specimen obtained from Dr. Van Gieson had been examined with a view to determine whether it corresponded with Benedict's notion that confluent fissures were characteristic of criminal brains. Examinations of this particular brain, that of a murnerer, of undoubtedly criminal characteristics, had shown that it did not correspond with the type as described by Benedict. As against the idea of this observer, Eberstaller had advanced the fact that many of Benedict's so-called characteristics were to be found in the normal brain. Giacominni had determined by comparison that there were more confluences in normal brains than in those of criminals. If increased fissuration was a criminal chararteristic, this, other things being equal, implied an increase of gray matter, and therefore low type brains might be said to have proportionately a larger amount of gray matter. Undoubtedly the criminal brain could be picked out of a mixed lot, but only by virtue of general characteristics, and there could be no certainty that all criminal brains could be thus selected. The characteristics of degeneracy were such as were to be found about the rest of the body, and were not yet sufficiently marked to be expressed in a systematic manner.

DISCUSSION.

Dr. COLLINS said that from a study of the best writers on this subject, and a somewhat limited experience at three or four autopsies on murderers, he was not prepared to say that there was a criminal brain, although there were often found in such, fissural and gyral peculiarities which merited study and observation. In the autopsy on a murderer who had lost his life in attempting to take that of a New York financier, the speaker had found really remarkable structural changes, and whether these were the result of retrograde changes during the life of the murderer, or an inherent structural absence from the beginning, he could not say. The fissure of Rolando was very shallow, the gray matter thinner than normal, the ascending parietal convolution was small, and the entire left hemisphere gave an idea of changes from the normal in conformation. One thing is absolutely necessary before real satisfactory progress can be made in this direction, and that is to decide on what the fissuration and gyral condition of the normal brain is. As it is now, what is considered quite typical of the normal brain by one may, when looked at with other eyes, be thought to be peculiar. Further careful comparisons between the brains of the known criminal class with those of a known high order was necessary before any valuable conclusions could be drawn.

Dr. CHARLES K. MILLS believed that there were many misconceptions on the part of those who criticized the observers who had reported aberrations and irregularities in the brains of criminals. No one believed that all criminals presented a brain anatomy that would enable them to be ranged under a special type. Criminals belonged to very different classes. A criminal type of brain could be expected from those who were victims of a bad heredity or very early arrest. Paranoaics, criminals, idiots, imbeciles, and those generally who were victims of arrested or abortive development, would probably present brain abnormalities even of a gross kind. The brain shown by Dr. Donaldson exhibited what seemed to him to be evidences of aberration, particularly in the parieto-occipital region. The subject was one, however, that could only be settled by careful and prolonged investigation. He could not believe with Prof. Hilder that it was best to disregard altogether the study of the brain of lower animals as a help to a proper comprehension of human cerebral anatomy. The study of fœtal brains was of course of the greatest importance, but so also was that of the brains of apes and lower animals.

Dr. KNAPP had nothing to say as to the anatomical conditions, but he wished to support Dr. Mills' views as to the distinction between criminals. It was as vague to speak of a criminal brain as it would be to speak of an insane brain, classing together indiscriminately mania, melancholia, paranoia, and general paralysis. Before we could speak definitely as to the criminal brains we must first study the criminal history, and the condition of the criminal himself, supplemented by a careful anthropometrical examination.

FOLIE A DEUX, WITH REMARKS ON SIMILAR TYPES OF INSANITY.

Dr. C. K. MILLS presented notes on two cases of this disease. The two patients were sisters, the eldest thirty-two years of age, the other less than two years younger. The father was a hard drinking, quarrelsome man. The first patient had been deranged from three to four years. She had complained of strange feelings as of something growing in her abdomen, of sickness of the stomach, bloody passages, chills, and other unpleasant sensations. She had been troubled for a long time with strange voices. She was tormented by people both at her work and at home, and was made to say very ridiculous things. She apparently had hallucinations of several senses. A stench of blood came up through her throat; at times she was grasped by a hand or hands. Men would appear before her; sometimes they would get on their knees and solicit her. She was full of sexual delusions with reference to men and their designs upon her. The heads of men would appear before her at her work. When she did not see them, sometimes she would feel them or hear them; often she heard their voices talking with her after midnight, saying all sorts of filthy things.

The other patient's mental disturbance had come on a few weeks after her sister's. Apparently the delusions of the first had to some extent been imposed or communicated to the second. Besides having various physical symptoms, the second patient, who seemed to be weaker both mentally and physically than the other, told the most filthy stories. She said that she knew who the men were that were abusing her—knew their names. These patients had evidently become a nuisance both at their home and in the neighborhood. Some of the men they had accused had been threatened by them. They appeared to believe firmly in what they said, and yet at times to appreciate that something was wrong with their heads. They eventually went quietly and without resistance to a hospital for the insane, thinking apparently that they might be able to get their troubles straightened after they got there. They presented, as was not unusual, a blending of the characteristics of the three forms of *folie à deux*, that is of the imposed insanity, the simultaneous insanity, and the communicated insanity. The influence of heredity was decided; the delusions were persecutory. The speaker also referred to other cases that had come under his notice, and spoke of the forensic importance of the subject.

A CASE OF RAPIDLY FATAL MOTOR AND SENSORY PARALYSIS, WITH AUTOPSY SHOWING ACUTE MYELITIS MAINLY OF THE DORSAL CORD.

Dr. MILLS read a paper on this subject. The patient, a man thirty-seven years old, with an uncertain specific history, six months before coming under observation had had a large carbuncle between the shoulders. For months he had shown some tendency to drag his feet. For two weeks he had had pain and soreness nearly in the line of the right nipple which extended later into the armpits and down the inner side of the arm. Four days before he was first seen he had developed a severe pain across the loins. The next day he was barely able to walk, and in thirty-six hours he could not stand. Twenty-four hours later he was completely paralyzed as to motion in both lower extremities, and showed also total loss of sensation as high as the nipples. He had incontinence of urine and fæces. Knee-jerks, muscle-jerks, and cutaneous reflexes were abolished. This extreme paralysis was fully developed on May 31st, three days after the first symptom of motor loss became marked. His temperature had risen rapidly to 104° and 105°, with corresponding increase of pulse and respiration. He had died June 7th. From May 31st to June 4th his condition did not change much except that the line of insensibility had advanced a little higher and ecchymotic areas had appeared on the thighs. The motor paralysis, reflexes, etc., made no improvement. On June 5th he had complained of severe pain in the upper arms, coming in paroxysms. Mucus collected in the larynx, weakness of the voice came on, the surface of the body became cold, with some delirium, and at times a marked disposition to somnolence. From the 5th he had kept both the forearms flexed, and rested them on his abdomen and chest, the little and ring fingers being also flexed. At the autopsy the vessels of the spinal pia were markedly distended with blood. On section, the periphery of the cervical cord was of good consistence, but the centre was much softened. As the sections were made lower down, the transverse area of the softening, until in the dorsal region only a shell of solid tissue surrounded a creamy mass. The softening grew less again in the lumbar region. Below the right groin was a swelling which contained broken-down glands and pus. Other organs and parts were found to be normal. Microscopical examination showed in the dorsal region the nervous tissue almost entirely destroyed. The blood-vessels were distended, and there were many scattered hemorrhages. Hemorrhages were also present in the pia and in some of the peripheral nerve roots. The upper part of the cervical region was very little affected, the lumbar much less than the dorsal. The case was unquestionably one of acute, rapidly-spreading myelitis.

A CASE IN WHICH EXPLORATORY TREPHINING AND LIGATION OF THE VERTEBRAL ARTERY WERE PERFORMED—AUTOPSY SHOWING GLIOMATOSIS OF THE CEREBELLUM, PONS, AND OBLONGATA, WITH HYDROCEPHALUS AND HYDRORACHIS—OPENING IN THE SKULL FROM CONTINUED PRESSURE.

Dr. J. B. Deaver and Dr. Mills presented a paper on this subject. Dr. Mills regarded the case as of unusual character and probably unique. The patient was a boy, eleven years of age, who had in December, 1889, commenced to complain of pain in the head and some stiffness of the neck. Other symptoms, which had developed slowly, were failing sight, spells of nausea, occasional attacks of violence or excitement, strabismus, staggering in walking a little more to the left than the right, a feeling of dizziness, described as "going over," and shortness of breath. Before the operation, double optic neuritis in an advanced stage was present. Hearing and taste were not impaired. There was no motor paralysis, nor disturbance of common sensibility. No nystagmus. Examination showed a pulsating tumor in the occipital region slightly protruding through a small opening in the skull to the left of the occipital protuberance. A distinct thrill and bruit seemed to be present. Three scars were noted on the posterior aspect of the head, one just above and to the right of the opening.

Dr. DEAVER made some remarks on the examination of the patient and upon the operation. A tremor was felt, which had seemed to him the same as that made by an aneurism of the arterio-venous type. Auscultation gave a bruit. Pressure upon the carotid arteries had lessened the pulsation and bruit. The opening in the skull was enlarged so as to examine the supposed aneurism, which appeared to be in the line of the lateral sinus, but when this was done, the character of the swelling was too uncertain to go further. An exploring needle was introduced, the withdrawal of which caused bleeding, which required long pressure to arrest. Later the left vertebral artery was ligated, but with no beneficial results. After the operation the pupil on the side corresponding to the cicatrix was contracted. The patient slowly grew weaker, and died several months after the operation. An autopsy was obtained. This revealed a gelatinous mass which had occupied much of the fourth ventricle, reaching from or into the middle lobe of the cerebellum and both cerebellar hemispheres. The ventricles of the brain and their horns were enormously dilated, and at several places at the base, rupture had almost taken place into the cranial cavity. When the spinal cord was severed from the oblongata the central spinal canal was found to be one-sixth of an inch in diameter, and from it much fluid escaped. The chief points of interest were the reference to the diagnosis from aneurism, the mechanism of the process by which the opening in the skull resulted, and the production of the hydrocephalus and hydrorachis.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, June 7, 1892.

The President, Dr. M. A. STARR, in the chair.

PRIMARY MYOPATHY.

Dr. FREDERICK PETERSON presented a case of primary myopathy in a man, aged forty-five years, who came to the Vanderbilt Clinic a few days previous to the report. Four and one-half years ago the patient had noticed a drooping and weakness of the shoulders. He had attributed this to his hard work as a mason. Gradually this weakness had increased and spread to other parts of the body. The most striking feature at first sight was the "winged scapula" of serratus paralysis on both sides. Besides the serrati, there was complete wasting of the sternal portion of both major pectorals, and there was marked diminution in size of both long supinators of the right triceps and biceps, of both trapesii, and of the right thigh and buttock; there was also a slight asymmetry of the mouth and forehead, as though the right face were somewhat involved. As was seen in the exhibition of the patient, the forearms and hands were absolutely free from the disease. The deltoids were large as compared with the wasted muscles about the shoulders; they were very firm, and might possibly have been hypertrophied. The calves of both sides were comparatively large. There was no anæsthesia anywhere, and no fibrillary twitchings. The knee-jerks and wrist-jerks were perfectly normal. All of the muscles reacted to faradism, but there was a quantitative change in the reaction in direct proportion to the amount of wasting. The case was interesting because of its rarity. It was, of course, not an Aran-Duchenne or peroneal type of progressive muscular atrophy. It was a primary myopathy, and the only question in the mind of the speaker was whether to consider it an Erb's juvenile form or a Landouzy-Déjerine type.

Dr. B. SACHS thought that the case presented pretty distinctive features of primary dystrophy rather than of any other form. He had seen two cases of the juvenile type of progressive muscular atrophy in adults, which corresponded in many particulars to the one presented by Dr. Peterson.

HETEROTOPIA OF THE CORD.

Dr. Ira Van Gieson discoursed on the subject of bruises of the cord, as related to the cases of so-called heterotopia or congenital malformations of the cord substance. Research of the literature on the subject showed thirty cases of congenital malformation to have been published. According to Dr. Van Gieson only six of these represented, microscopically, true cases of heterotopia, the remainder being post-mortem bruises of the cord mistaken for pathological conditions.

After very careful scientific study of the literature of all the available microscopic specimens, and from experimental work, the author was forced to the conclusion that most of the malformations of the cord which had been previously published were really cases in which the cords were injured in the removal and in the process of hardening. The publication of so many cases of heteretopia of the cord, in which no corresponding symptom had been present during the life of the individual, instigated the author to a thorough study of the subject. The methods of removing cords was first looked into, to ascertain to what extent injury might take place under or during precautions. Microscopic examinations were made of cords in which bruising was not supposed to have taken place, and also in those where bruising had been due experimentally. Again in the case of persons of neuropathic dispositions, the cords were carefully studied to find what proportion of malformations existed in this class.

The fact that microscopic examinations of cords accidentally or experimentally bruised, showed the same distortion or displacement of the constituent parts as did the specimens exhibited by the various authors on the subject, and reported as cases of congenital malformations, led to doubt at once of the cases being true heterotopia of the cord. The speaker said that it was very easy to mistake such distortion for malformation when the cord did not show macroscopically any injury. It took very slight pressure, on a cord in a recent state, to cause separation of its structures. The evidence of such injury would show itself in the section by a displacement of some of the white or gray matter to a higher or lower level, or by one or more of the horns being crowded to one side or the other, or being almost or quite obliterated. The proof of such an injury being the cause of the displacement was that in making further sections the absent or distorted portions would be found in different situations. The author illustrated the subject by a large number of lantern slides, the specimens being taken from his own and other observers' work. In the course of his remarks he referred to the specimens which were labelled malformations of the cord in cases of acute myelitis. He did not see how it was that the fact of the extreme softening of the cord, which always took place in this disease, was overlooked, making it almost impossible to handle it without inflicting injury, so that sections in such cases would be sure to show distortion of some of its elements. Very careful analysis of these cases pointed clearly to their being post-mortem injuries and not congenital malformations of the cord. Some of the specimens showed how pinching, bruising or doubling of the cord produced the abnormal conditions, such as enlargements or small nodules which were frequently seen, and microscopically how masses of gray matter might be found in the white substance, the gray horns attenuated, enlarged distorted, or absent in part or entire, the presence of three or more horns, and also why the fibres were sometimes found taking abnormal directions. From his very thorough study of the subject the author was forced to believe that if he could produce experimentally conditions identical with those which had been previously described as congenital malformations, he was very much in doubt as to their being genuine. And also the fact that such abnormal conditions of the cord had not produced any corresponding symptoms, in itself militated very much against diagnosis of cord disease.

Dr. SACHS thought that the author had done a very courageous work indeed, and was very much surprised that out of the workings of so many scientific men that there could be so much doubt as to their accuracy in manipulations. It seemed curious that they should all have overlooked an element of danger, such as injury of the cord which might obscure any possible abnormal condition, and not recognize it. He had removed a great many cords, and was not aware that he had ever bruised them to the extent of obscuring the condition present; he was, however, glad to hear that there was such an element of danger, and was prepared to take precautions to avoid it. He inquired of the author how he handled cords so as to preclude the possibility of injury.

Dr. VAN GIESON said that in the first place the mallet and chisel were to be avoided, as the blow or jar upon the cord was a fruitful source of injury, and also that if the chisel was forced against the cord while it had resiliency enough to spring back and not show the pressure, it would microscopically, and these should not be used. The author always employed a saw and scissors; and for the process of hardening, the cord should be suspended in a tube.

Miscellany.

SOME POINTS TO CONSIDER IN THE SELECTION OF A GALVANIC BATTERY.

Editor of the JOURNAL OF THE NERVOUS AND MENTAL DISEASE:

Kindly recommend me a suitable Galvanic Battery that is not too cumbersome to carry to patient's house, easy to manipulate, and one that can be, with proper care, relied upon for years, and not too expensive or impossible to repair except by maker, etc., etc.

Yours very truly, C. O. F.

PETROLIA, CANADA.

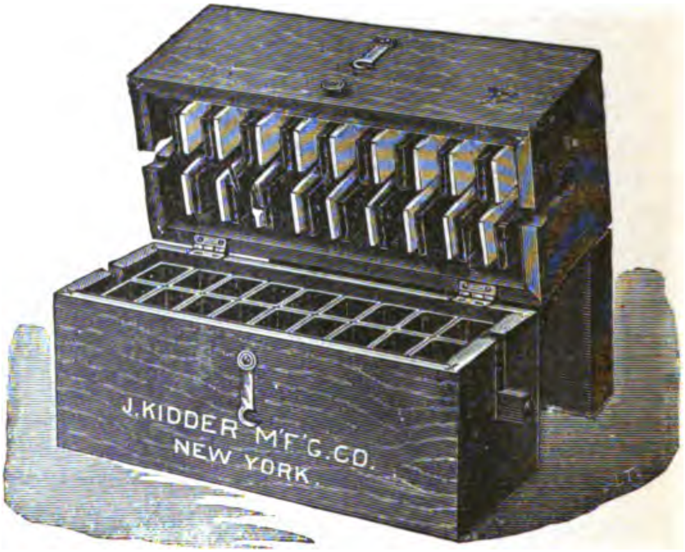
There have been a number of questions directed to us in reference to this subject, so that we have been convinced it would be well to try and answer them in some way.

Merits galore have appeared in print in favor of most every form of battery in the market, and so much has been written upon the subject, that extended discussion in the favor of one particular battery is out of place. Perhaps it is best to premise our recommendation of a battery with the statement that all batteries have their particular good features and many points that recommend them favorably for a special place in the esteem of the manufacturer and the uses of purchaser.

We have selected the above letter as one that covers the ground and expresses the more or less general wish of the physician who desires to combine utility, economy, simplicity, and permanency in the purchasing of his instrument.

A battery that is simple, a battery that is movable, one that is efficient for all needs, one that is reasonable in price, easily renewed in all its parts by the owner, or at most by any neighboring machinist.

We draw attention to the CUT, which represents one of the oldest makes in the market—an *acid-plunge* or *dip* battery.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It is by far one of the simplest, cleanest, and most efficient in its class of batteries.

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The zincs are of good size, giving a large surface to the action of the fluid and of the best quality of material.

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It is as well capable of accomplishing most any need of galvanic therapeutics, excepting the extreme forms of electrolyses, where it is necessary to have from seventy-five to one hundred volts electro-motor force, which, however, comes more within the province of surgery. We can, therefore, call it an efficient, medical, therapeutical galvanic battery.

CIVIL SERVICE EXAMINATIONS.

An open competitive examination of candidates for Junior Assistant and Female Physicians, to fill vacancies in the medical staff of the several State Hospitals, will be held at rooms of the Civil Service Commission in Albany, August 24, 1892. Salary of Junior Assistants, $1,400 and board; Female Physicians, $1,200 and board. For further information apply by mail to Clarence B. Angle, Secretary, Albany, N. Y.

JOHN B. RILEY,
Chief Examiner.

ALBANY, N. Y., July 20, 1892.

Book Reviews.

A MANUAL OF DISEASES OF THE NERVOUS SYSTEM. By W. R. GOWERS, M.D. Second Edition. Vol. I. Diseases of Nerves and Spinal Cord. Philadelphia: P. Blakiston & Co.

New editions as a rule do not mean exactly a complete revision, and one hesitates to trust blindly to the fact, as in the present day medical works are prolix, and medical libraries expensive, and duplicates are not a desideratum.

The first edition of the present work soon became exhausted, and it behooved the publishers to hasten this second edition.

This has been delayed, for the author has, as he expresses it in the preface, thoroughly revised it.

It has been increased by about 150 pages. For instance, whole section on Multiple Neuritis—additional matter nearly fifty pages; new chapters on Endemic Neuritis, Malarial Neuritis, Beri-Beri, and Leprous Neuritis, Brachial Neuritis, Senile Paraplegia, Morvan's Disease, and Peroneal Type of Muscular Atrophy. Additions and corrections are made throughout the book.

New plates are added as well.

We wait the appearance of the second volume with interest, and in its complete form trust to be able to say: By far the best work on the Nervous System published.

THE INTRA-CRANIAL CIRCULATION AND ITS RELATION TO THE PHYSIOLOGY OF THE BRAIN. By James Cappie. Edinburgh. James Thin, publisher.

Dr. Cappie, in his work on the "Intra-Cranial Circulation," has given us a very interesting and suggestive *résumé* of the subject. It is rather a philosophical discussion of the function or action of the brain than an anatomical description of its blood supply.

He has apparently not attempted to do other than place before us the usual and accepted idea of its circulation, which, however, is given in a clear and very satisfactory manner. From the title one might expect perhaps some wide discussion, especially of the minute vascular supply to the special segments of the brain; but in this we are disappointed. In his first chapter on the Philosophy of Physical Causation, his philosophy prescribes three factors—first, matter; second, energy; and, third, motion.

The first and third we must necessarily admit, otherwise there is nothing for us to fix in the realm of thought; the second, energy, or that force which moves matter and effects motion, we must accept, otherwise we cannot understand motion. Causation cannot be considered without some form of energy. Every factor which enters into a change in the character of this energy is a part of the cause. The author does not go deeply enough into the subject to allow of much criticism.

In his second chapter on the Connection of Mind and Brain, he accepts, if I understand aright, the brain as the organ of the mind. As he very truly says: Every form of mental action has its somatic side. This does not explain the connection between the molecular activity of the brain and activity of thought and volition. The writer is suggestive but not explanatory, but this is due to the subject; for while we can all admit that the brain is the organ of the minds, as, pathologically, its disease produces certain changes in normal feeling, thought, and action, and also in the realm of consciousness, still we are to-day even with our enlarged knowledge of the cerebral structure as far removed as ever from any understanding of what function of the brain renders special mental action, or, indeed, in what exact part of the brain mentality is located.

The third chapter on the circulation itself I have already referred to, including the one on Capillary Circulation. There is nothing added to our already accepted facts.

In Chapter V., on the Uniform Mass of the Blood within the Cranium, I would take issue.

He has run up against the old wall that the circulation in the brain cannot be altered to any large extent, owing to the fixed rigidity of the cranial vault. As he truly says, physiologists have for some time considered the theory as an exploded one.

He does not admit that the cerebro-spinal fluid can act as a most important medium in regulating and allowing for an increase or decrease in the blood supply to the brain, maintaining by its presence or absence an equable pressure on the cerebral substance in all conditions within its physiological limits. He maintains that there is very little fluid that can accumulate either in the arachnoid cavity or that can pass into the spinal cord, *i. e.*, between it and the dura, maintaining that the rigidity of its walls, acts almost as does the cranial vault. He also thinks that should this transfer take place rapidly, that the ascent of the cerebro-spinal fluid to the brain would float it upward, tearing, or at least putting great traction on the cranial nerves at the base.

He seems to forget that it has a clean course through the ventricles which connect directly with the arachnoid and perivascular spaces, and that on the very principle that a vacuum cannot exist in nature, the attraction toward these places of least pressure is very strong.

In a paper on Cerebral Compression, which is unpublished, although read, I had occasion to study this very subject. As Dr. Cappie says, the cerebral contents can be considered as consisting of brain substance, blood, and cerebro-spinal fluid.

The most compressible is the last and easiest to transfer from part to part, which indeed, to my mind, seems its main function, providing the brain a cushion to rest on and within certain limits preventing compression.

Passing to the chapter on Sleep, while he accepts the idea that cerebral anæmia is probably present, as shown in the decreased size of the arteries and the increased size of the veins in the retina and also in the brain substance when observed, he holds that an additional factor is the compression produced by these distended veins in the brain itself—the pia mater, as he particularly expresses it, "during sleep soothing to rest by a closer embrace."

This, however, is not the cause of sleep, but a condition found in sleep.

In normal sleep we have an absence of consciousness more or less complete, due to the fact that no impressions are sent to the cortex, or else are not received if sent.

Consciousness implies a constant receipt of impressions from the outside world, or a revival or memory of those formerly received. Shut out all sensory impressions from the special senses to sensory nerves and consciousness must be lost. As a consequence truly we find decreased vascularity of the cerebral receiving centre.

To hasten on to the final chapter on "Some Points on Mental Physiology," I agree that in specialized mental action in all probability an increased blood supply is demanded by that part as in any other organ when it is in active function. I scarcely think, however, our knowledge of the functions of the brain permit us as yet to look upon it as consisting of several distinct organs, which in their separate activities withdraw, at least to any extent, the blood supply from other parts, rendering them anæmic and subject to inhibitory influences from the more active organ. Our knowledge of the cerebral circulation as a whole scarcely warrants such an assumption.

In closing this diffuse and inadequate criticism of a really very suggestive, if not original work, I would say one word in regard to the generally accepted theory of cerebral action which we owe to Hughlings-Jackson. To consider cerebral action, whether in a physical or psychical direction, as the freeing of pent up forces or as an explosion, is erroneous. We do not consider other organs as in a constant state of tension, waiting only to be relieved of this tension by being called into active function, nor should we so regard the cell action of the brain. It is constructed to send its forces when properly stimulated into certain channels, either, in brief, of thought or action. Like all organs, it is never absolutely quiescent, while at times it is especially active.

The only occasion when the idea of an explosion is at all appropriate is perhaps during an epileptic seizure, and even then the idea called forth is too mechanical to be held in reference to any living tissue subject to vital changes.

EDWARD D. FISHER.

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a Future Note we will offer a recapitulation of what we have said on this subject. **Meanwhile,** we ask attention to the following seasonable remedies:

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OF
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A MONTHLY PERIODICAL

EDITED BY

CHAS. HENRY BROWN, M.D.,

NEW YORK,

WITH THE ACTIVE CO-OPERATION OF

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SEPTEMBER, 1892.

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Note Relative to the Buffalo Lithia Water.

WILLIAM A. HAMMOND, M.D., Washington, D. C.

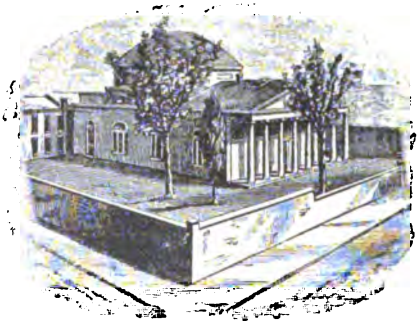
Surgeon-General U. S. Army (retired), formerly Professor of Diseases of the Mind and Nervous System in the University of New York, etc.

There is a point in relation to the therapeutical efficacy of the Buffalo Lithia Water which has not as yet, I think, received sufficient attention. It is well known that many cases of diseases of the nervous system are complicated with lithæmia, and that unless this condition is removed a cure is very often retarded and not infrequently entirely prevented. It is quite commonly the case that in cerebral congestion producing insomnia, nervous prostration resulting from over-mental work or much emotional disturbance, and in epilepsy (to say nothing of many cases of insanity) an excess of uric acid in the blood is often observed. This state appears to be altogether independent of the character of the food, for no matter how careful the physician may be in regard to the diet of his patient the lithæmic condition continues. I have tried to overcome this persistence by the use of phosphate of ammonia and other so-called solvents for uric acid, but without notable effect.

Several years ago, however, I began to treat such cases with Buffalo Lithia Water, with a result that was as astonishing to me as it was beneficial to the patient, so that now in all cases of nervous diseases under my charge, in which there is an excess of uric acid in the blood, I use the Buffalo Lithia Water in large quantities. By this I mean that I do not have the patient drink merely a tumbler or two in the course of the day, but that I flood him, so to speak, with the water, making him drink a gallon or even more, in the twenty-four hours. By this course the urine after a few days ceases to deposit uric acid crystals on standing, the morbid irritability of the patient disappears, the tongue becomes clean, the wandering pains in the head are abolished, and the system is rendered much more amenable to the special treatment which may be necessary for the cure of the disease from which the patient suffers.

I have tried carbonate of lithia dissolved in water in various proportions, but it certainly does not, in cases to which I refer, have the same effect as Buffalo Lithia Water.

WASHINGTON, D. C., January 25, 1892.



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Professor of Diseases of Women and Children in the University of Maryland, says:

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All the Affections Peculiar to Women

that are remediable at all by mineral waters. In short, were I called upon to state from what Mineral Waters I have seen the greatest and most unmistakable amount of good accrue in the largest number of cases in a general way, I would unhesitatingly say the Buffalo Springs, in Mecklenburg County, Virginia."

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THE
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Original Articles.

THE NEURO-PSYCHICAL ELEMENT IN CONJUGAL AVERSION.[1]

By SMITH BAKER, M.D.

THE steps which lead to the discovery of conjugal aversion as a factor in the ætiology and portraiture of certain neuro-psychopathies are marked severally by difficulties somewhat different from those characteristic of other investigations.

Primarily the disclosure is largely a result of confidence on the part of the sufferer, evoked by his recognition of a certain innate sympathy as well as strength on the part of the investigator; while secondarily, success depends upon a most comprehensive knowledge of human nature, and the keenness and patience and experience which enable the neurologist to use his knowledge at the right moment.

Some people reveal the condition of conjugal aversion quite voluntarily, and because of craving for recognition and sympathy, if not for remedial help; others disclose the true state of things only as it appears to them to favor their better interests; while others still require persistent invitation and encouragement before any phase of the truth can be ascertained.

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[1] Presented to the American Neurological Association, at New York, June 22, 23 and 24, 1892.

With reference to the confidential disclosures themselves, many of them are so replete with misleading suggestiveness, that it not infrequently seems impossible to trust one's judgment as to what is really truthful or otherwise, or needed or not required for proper relief. Equally is this true with reference to the confidences of either sex. If the complainant be a male, he may offer as an essential part of his revelation that the wife suffers from obnoxious leucorrhœa, or that she complains of local irritability and pain, seems to be nauseated and loosened at the bowels; or suffers from extreme palpitation or severe sense of exhaustion, or that she simply rebels for indefinite and inexplicable reasons against his invitations and advances to intercourse. More than once, however, have I discovered eventually that such asservations were quite or entirely false, and that they were attempts really at self-justification on the part of one, in whom the true reason existed primarily, while the wife's interference, if at all, came simply as a reflex from his own feeling.

Thus in the case of a working-man, full-blooded and hearty, who complained of refusal for reasons he could not understand, I found that the true reason for his discomfiture lay in the fact that he himself had come to regard the conjugal and its resultant parental relation as of increasing importance, and that while his wife was neither more nor less solicitous, he had slowly developed conjugal aversion because of depressing retrospections upon his own earlier indulgences.

In this case there was no history of true psychical impotence, but simply one of increasing aversion to cohabitation with the one who could legitimately expect and demand it. Other cases could be reported, where retrospective views of life not revealing things which could be brought up to standards since adopted, have interfered more or less seriously with conjugal relations, and so have laid the basis of wonder, of questioning, of differences, and even worse.

Again a man may find himself progressively becoming antipathetic, through recognition of the comparatively less-developed personality of the one to whom he happens to be married. Marrying, perhaps, before he has learned to accurately judge of character and its tendencies, he awakens in time to the fact that he is honorably bound to live all his physiological life with, not a real companion, but a mere counterpart. His own nature has been one to expand responsively to all the developmental influences about him; but his wife has proven practically to be a developmental arrest at the immature wifehood stage. As man is constituted there is always danger that when he finds himself thus dissatisfied, he will drift into other more congenial associations and indulgences. The land is filled with people married in name and still respectable who have really diverged at just this point; while numberless fellowships outside the home, attest some of the ways in which relief for others is sought for and said to be found.

Mr. A., aged twenty-seven, married at twenty years of age to a woman three years his senior. To them two children were born during the first four years of their married life. Mr. A. is a man of goodly heritage, and has developed mentally and morally with every experience. His wife, although she had three years of culture the start, has not so developed. Her reading, her mission, her social efforts, her personal care are quite what they were, or even less important than at the beginning. And now, since the birth of the last child, her husband has slowly but surely come to feel that she is not only at a standstill, but that she is utterly incapable of keeping up with him in the several positions which his ability and enterprise assure them and their children; while at the same time he has recognized the development of an aversion to marital relations with her which now occasionally leads to fault-finding on her part, and even to expressions of various suspicions and direct accusations of infidelity. He continues to be upright, patient, and more or less hopeful of a more satisfactory state of things. In another instance, very similar in many details, the long-suffering, disappointed man has allowed himself to drift into serious sexual perversions which may result at anytime in total disaster.

J. H., married at the age of twenty-six to a woman of the same age—the parties seemingly being well mated in every way. She desired children; he felt himself inadequate to the assumption of increased responsibilities, and allowed himself indulgence in coitus reservatus only. As time went on this became distasteful, and advice was sought as to the reason and remedy; after which, upon concluding that progency constituted the fortune he really wanted, he found that his masterful cheating of nature had resulted in her cheating him, in turn, out of all desire for conjugal favors. Children have come to him, but notwithstanding this, sexual contact with the wife who seems always to have been as lovely as she has been patient, has become increasingly antipathetic.

Such cases as this should not be confounded with those in which previous indulgences and immoralities have led on to true psychical impotence. The real condition is that of inhibition of desire rather than of ineffective accomplishment, and oftentimes the inhibition seems to relate to some particular rather than to all persons.

Thus a middle-aged man, father of four children, who expressed himself as, after all, preferably sleeping with an iceberg to his married wife, did not hesitate to affirm that he would go on his knees through flood and fire to have intercourse with a certain other woman undescribed.

Possibly in the defections of many a home circle, the element of marital aversion has a most controlling and destructive influence. Indeed this appears somewhat distinctly to be the case when we consider histories that less occasionally come to light.

A man of forty years of age had endured the sexual indifference and repulsion of his wife for fifteen years, but had been all along more or less hopeful of a change for the better; meanwhile his own appetite for indulgence had subsided to such an extent that he sought advice for some supposed injurious disease of either the reproductive organs or of the central nervous system. When told that none of either class was discernable, he exclaimed, "then its that —— woman," naming his wife, and that he would not endure it any longer. Within a day or two a newspaper item revealed that my client had departed unobserved and untraceable. Of course, exceptional cases may not establish a rule.

But let us study this matter of conjugal aversion as found in the feminine field—a much wider and more important, yet more difficult, one in every sense. As a matter of common observation, the sexual appetite of many women does not reveal itself except as the result of education and practice. That this sort of natural-unnatural condition is the source of much disappointment and of intense suffering on the part of woman herself, as well as of family dissatisfaction, and sometimes worse, we have already seen, and it is something that may be confirmed almost everywhere.

Mrs. X., country born and bred, was trained by her mother from early childhood to believe that everything appertaining to the sexual relations was to be reprehended and repressed; and likewise that men generally were a class of insatiable brutes who, if not entirely avoidable, were to be tolerated as distantly as possible. In time, however, the daughter married a man who was not only possessed of manly sentiments and capabilities, but was also able to afford a desirable home and position in society. To this couple children were born at long intervals; but it would grieve a heart of stone to hear the father tell of his family experiences; while the children, who have all been under my care at times, give force to the suggestion that, as children, they have deserved a better inheritance than one of unhappiness and ill-health ; and in the case of the eldest, a daughter, there has been such a clash of counter-currents in her personality, that betwixt an intrusive overbearing sexuality on the one hand, and a morbid tyrannical conscience on the other, she has been subjected to several attacks of hysterical melancholia, with painful illusions of sexual contact and assault, and suicidal tendencies not a few.

If the grandmother could have foreseen the devilishness of the train of morbidity she inaugurated by her hyper-puritanical notions concerning sexual impulses and relations, she might have saved at least two generations from unhealth of both body and mind. Many times have I thus found that feminine sexual indifference, or aversion in one generation, has had its origin seemingly, in dominant hyper-moral and hyper-religious ideas in preceding generations one or more. Sometimes it first comes to light upon the marriage bed, as in a case where a bride of a single night left her groom forever because of the freezing disgust with which she recoiled from her first coital experience. Perhaps in this instance, as is certainly the fact in others, the aversion then or afterward had its origin in the severe and unexpectant physical suffering experienced from the hymeneal rupture and vaginal distention.

Mrs. W. consulted me with reference to sterility of several years' duration. The most careful investigation disclosed no physical cause whatever; and as she manifested marked sexual excitement during the examination, it did not then occur to me that aversion might have had anything to do with it; so I asked for an interview with her husband. This led to but one—a very important fact, namely, that he knew he was all right; as to his professed regret, a third party could unqualifiedly testify. At a subsequent interview the wife, of herself, asked if I thought antipathy on her part would make any difference; and added that ever since her first marital experience, which was so painful that she nearly fainted, she had never enjoyed intercourse, and, moreover, that she had always so dreaded contact, although no longer painful, that she was coming to dislike any sort of caress from her husband—a fact that stabbed her conscience and made her altogether miserable.

In this case the initiatory pain was soon recovered from and forgotten; but there had remained for years secondary shrugs of aversion, from which there was, as yet, no promise of recovery. Undoubtedly dispareunia accounts for many instances of conjugal aversion; instances illustrating the effects of physical disparity, too violent tittillation, local tenderness, and the like, coming frequently under notice. But these are not true cases of neuro-psychical aversion *sui generis.*

A typical case of true aversion in woman was that of Mrs. G., age thirty-six, mother of three children, born respectively three, seven, and fourteen years ago, who had always done all she could to interfere with proper conjugal relations, even to the extent of refusing her husband access to her room and bed, and to advising him to keep a mistress for his accommodation, and yet upon the examining chair this same woman revealed an exceptionally intense sexual erethism to which her whole being very evidently responded; while the closest investigation disclosed no local malformation, tenderness or disease. Careful examination of the husband suggested no physical disparity, and on her part dispareunia was not acknowledged. Everything went to show that he was a gentleman in all his dealings with her, and patient beyond the average. The wife declared her aversion to date back to before marriage, and to be owing possibly to ugly insinuations and dreadful to-be-thought-of revelations of gossipping married women;—her own mother not taking pains to inquire or instruct in any way. In spite of her aversion she stoutly claimed to love her husband, only she did not want him to "touch" her. Inquiry as to whether there might be another and more attractive party, whose "touch" might prove to be more agreeable, elicited no compromising blush or other evidence, and she seriously affirmed that her observation of life had not revealed to her that she could ever endure sexual contact with any one.

Looking back upon this case, I am inclined to think that the extreme aversion to conjugal relations, so contrary to all that might be predicated of her physical nature, was owing probably to two main reasons: first, an individual idiosyncrasy as yet unaccountable; and, second, ante-nuptial fright and disgust from vicious gossip; and that it was kept up by these not only, but by the somewhat severe childbed ordeals through which she passed. And yet there is another causative element, which more recently has come to my knowledge, which may be more or less applicable to this case; namely, the too ardent advances and conduct on the part of the husband. This idea came first from the intimations of an exceptionally intelligent woman, that she herself would undoubtedly enjoy marital intercourse, if the ardent tittillation of her loving and loved husband did not so "take her breath away," as she expressed it, that she had instinctively restrained herself, until she now experienced but little if any gratification. Another woman, however, declared that she had developed a quite absolute marital indifference because of the paradoxical fact that her own nature was too ardent to be satisfied with her husband's means of gratifying it; while a third, full-natured and voluptuous, and longing for conjugal companionship, shrunk from marriage because when a little girl she had accidentally come upon her parents in the coital act and had been frightened into distinctly hysterical convulsions then, and a lingering dread and disgust ever since. A peculiarity of this case, which led eventually to complete examination, was this: Whenever the subject of sexuality came across her mind in any way, she concomitantly experienced a series of disagreeable local formications, which sometimes persisted for an hour or two. These proved to be owing to a marked rythmical vaginismus which, so far as discoverable, was not due to tenderness or disease, and which yielded quite satisfactorily to galvanism. But notwithstanding this, the same aversion continued even after she became a married woman. In fact marriage is said to have increased the aversion at the same time that her sexual appetency has increased also. But I am reminded, as I think over some of these cases, that betwixt the romanticism of woman and her ability to mislead, there are many opportunities for blunder on the part of the ordinary observer.

Another source of marital aversion seems to lie in the fact that substitution of mechanical, and iniquitous excitations affords more thorough satisfaction than the mutual, legitimate ones do. I have known of cases of men who so much preferred the former to the latter, that they voluntarily refrained from conjugal approaches because of it. Obviously it must remain for the women members of the profession to investigate the matter of self-stupration as appertaining to woman herself. But that it is a source of much exhaustion, local suffering, and general disquietude and discomfiture, is evident enough to all. In a number of instances I have suspected this to be the source of otherwise inexplicable conjugal aversion.

A perfectly formed woman, of a family healthy and prolific for several generations, married to a scholar and gentleman, who awaits patiently the marital solicitations of his wife, finds herself shrinking from every sort of objective contact with the generative organs. On the examining chair she wriggles and protests, and evinces marked aversion and disgust—including much that is evidently feigned and hysterical. Yet the instinctive lubrications and bodily attitudes and movements are all present; and the fact of a hyper-developed sexual nature evident in almost every imaginable way. Inspection shows the labia, clitoris, introitus vaginæ all to be thoroughly congested and erectile, and that without appreciable leucorrhœa to account for it. Repeated examination under differing circumstances has not led to any other conclusion than that the woman has enjoyed her self-originated excitements so thoroughly that the experiences of the marriage-bed have paled in comparison.

But there are other classes of conjugal averts which are derived in a similar manner from both sexes. Thus there can be no doubt that many instances of aversion are owing to the conventional marriages of the day.

However well the Frenchman may enjoy his family life, or the Frenchwoman her family freedom, it remains none the less true that the American's nature does not as yet take kindly to the marriage-bed that has come simply as the result of purchase or other arrangement. Post-nuptial contentment follows in such natures quite exclusively upon ante-nuptial attractions; and every attempt to violate this may result disastrously in many ways. Still other instances of aversion are discoverable among those whose disparity of age awakens disgust rather than satisfaction in the more youthful party. That Roger Chillingworth could not awaken the physiological responsiveness in Hester Prynne that Arthur Dimmesdale could, is attested amply by the mere presence of little Pearl; while Robert Browning's Count Guido acknowledging

> "But myself am old,
> I am past my prime, I scare the woman-world,"

more than half sees why Pompilia should exclaim: "Life means with me successful feigning death."

More than once have I seen the "feigning-death" expression on the countenance of some young wife almost successfully trying to tolerate the presence of her woman-scaring husband. A recent case would enlist the sympathy of Mephistopheles himself.

Finally, that differences of taste and occasionally of the deeper religious convictions, and that such other conditions, as unsatisfied æstheticism and intellectual yearnings, should result eventually in conjugal aversion, is not to be wondered at when we consider how much of each one's real life is made up of these elements, and that each individual is a summation of every element, from the animal to the spiritual. Dorothea Brookes married to Edward Casaubon realized most terribly the force of George Elliot's words concerning it: "There is hardly any conduct more depressing to a young, ardent creature than that of a mind in which years full of knowledge seem to have issued in a blank absence of interest and "sympathy;" and we have undoubtedly all seen the deep intense strugglings of sensitive natures, as found in the persons of the Robert Elsmeres and the Catherine Leyburns of our acquaintance.

These conclusions, then, with reference to the origin of the neuro-psychical element in conjugal aversion are more or less tenable, namely:

1st. In unaccountable idiosyncrasy—a perversion of sensibility involving not only peculiar functional, but perhaps structural characteristics. 2d. In unsatisfactory retrospection. 3d. In inheritance and wrong trainings. 4th. Incidental impressions from ignorant and irresponsible sources. 5th. Marital preferences outside the legitimate companionship. 6th. Dominant attractiveness of third parties. 7th. Disparities of age, taste, religion, and the like. How the future will lead to modifications of our knowledge of the subject we may now only affirm that greater distinctness and comprehensiveness will surely result.

As to remedy, like many another disease, conjugal aversion is more easily described than remedied. We may invoke every help from pride and ambition and conscience, we may anathematize and excommunicate, we may preach and drug, yet find in the end that there is no sort of magical Puck with his

> "Little Western flower,
> Before milk-white, now purple with love's reward."

To prove beyond doubt that

> "The juice of it on sleeping eyelids laid
> Will make man or woman madly dote
> Upon the next live creature it sees."

And even if we should ever be so fortunate as to find such a potent remedy, we may safely anticipate that our Titanias and our Demetriuses will be quite as sure to wish and love and long for and evermore be true to the wrong party as otherwise. The fact is when Helen prefers Paris to Menelaus, not even the fall of a Troy can clear up matters so they will stay.

Effective prophylaxis, then, is our wisest hope. When we ask in what this should consist, we at once think of certain educational and social and possibly legal measures which might prove useful. Thus, there can be no question that proper instruction of those about to marry would save many from subsequent disappointment and aversion; or that proper notions about the sexual function and the sexual relations, and the care of the sexual organs; or that a more exalted idea of marriage itself would be a source of safety to others. While when we come to the management of a case in hand we cannot doubt that even local restorations and cures, recuperation of the nerve and brain elements, and timely instruction regarding the dangers and disasters attendant upon wayward longings and imaginations and solicitations will have much to do with obviating some of the more distant results. But always in connection with these cases there will arise the subject of social and legal readjustment and reconstruction—such a change in practices as shall insure to more people a proper marriage and relieve more people from the dangerous tension of those that are improper. But who is wise enough or presumptuous enough to undertake any sort of advice in this direction? Of all the attempts at readjustment of marital companionship that have come under my observation one only has resulted successfully. The woman, a zealous prude, has been re-married to an easy-going dolt for a number of years, and they seem to thrive happily. And the man, energetic and business full, has likewise found one to love and live with in mutual satisfaction. But the road out from the incompatible to the compatible seems, as a rule, to have no guide-boards that can be depended upon. And Pity will have need to follow hard after him who does not thoroughly believe this to be true.

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HYSTERO-HYPNOTISM.

Fries (Centralbl. f. Nervenheilk. und Psych.) describes a case of hystero-hypnotic condition, which came on after trauma, in a young man, a locomotive stoker. Three or four weeks after the accident, which was one of contusion above the right eye and which had healed by first intention, the patient had a sudden attack of complete loss of motion, with eyes set and staring. He did not seem to be unconscious, but there was complete forgetfulness of everything. During this condition of alienation he responded to suggestions promptly. The case was treated by excision of the scar and suggestion, the ultimate result being a perfect cure. B. M.

MOVEMENTS OF THE HUMAN MIND WHEN PLACED AT A DISADVANTAGE—A PSYCHOLOGICAL STUDY.[1]

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IT is interesting as well as instructive to observe the actions of the human mind when it occupies unusual or abnormal relations with its own instruments and present surroundings. And that it does sustain such relationships more frequently than is commonly supposed, is certainly a fact.

When the traveler in the dusty and parched desert views the *mirage* afar off, promising water to his burning lips, and the cool shade of green trees to his heated and weary frame, he quickens his pace, that he may the more speedily enjoy the refreshment and repose that seem to be almost within his grasp. But as he journeys onward, the pleasing vision recedes; it slowly fades and disappears. Yet how real, how true it seemed. Had some accident turned the beholder from his path, and he had failed to detect the illusion, his condition would ever have remained true to the idea, that the phantom picture was a veritable reality. Indeed, thoughts and convictions, and conduct legitimately derived from a belief in the material certainty of the scene—though erroneous and possibly criminal—could by no fair rule be imputed to him as an agent truly responsible.

To illustrate the mystic snare in the meshes of which the mind may be entangled and held prisoner—when no opportunity is presented to test and verify the *seeming*, by comparison with the substantial and *material*—the pretty fable of the imprisonment of Merlin, the necromancer, is quite in point.

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[1] Read before the Neurological Section of the American Medical Association, Detroit, June, 1892.

The fair Viviane—called also the Lady of the Lake—was enamored of Merlin, as indeed he also was of her. Casting about for some way by which she might detain him "for evermore," she persuaded him to impart to her some of the secrets of his art. At length it fell out, as they were going one day hand in hand through a forest, they found a bush of white thorn. They seated themselves under the shade of this bush upon the grass, and Merlin fell asleep. Then the dame rose and made a ring with her wimple round the bush, and round Merlin, and began her enchantments, such as he himself had taught her; and nine times she made the ring, and nine times she made the enchantment, and then she went and sat down by him. And when he awoke it seemed to him that he was enclosed in the strongest tower in the world. Then he said to the dame, "You have deceived me, unless you abide with me, for no one hath power to unmake this tower but you alone. And Merlin never went out of that tower where his mistress, Viviane, had enclosed him; but she entered and went out again as she listed."

In order to obtain his freedom, all that Merlin had to do was to make the effort and walk out of the seeming prison. But the illusion was so vivid and truth-like, that the mind was servilely submissive to the delusive yoke placed upon it.

Thoughts, convictions and acts, based upon such a condition of hypnotic trance, could not, by any reasonable consideration, be held as proper subjects of accountability.

There are other sources of delusion, it is perhaps superfluous to say, besides the apparent freaks in nature's laws exterior to the physical organism, and besides the weakness and unsteadiness of the nervous energies within it.

Diseases within the brain not infrequently affect one or more of the senses in a manner analogous to the impressions received through normal avenues. The mind is ignorant of the source of sensations thus originating; and they are, as a rule, wrongly interpreted. Yet the will directs the personal conduct in a way that would accord with the healthful operations of the perceptive faculties. So convincing are morbid hallucination, that the mind is prone to receive them as representatives of the material forces of surrounding nature; and its movements are most likely in a line with their false and delusive teachings. It is evident that responsibility for acts growing directly from the impulses of hallucination should not be esteemed as complete. Hallucinations, epilepsy, and other nerve and mind disabilities, may come from traumatism as well as from brain disease. Injuries, though distant from the great nervous centres (not to speak of foreign bodies in the physical organism) may produce such morbid impressions as will simulate diseases of the brain itself.

It is, moreover, true that while the nervous system is in a morbidly receptive and impressible state, one very striking movement of the perceptive faculties may be aroused. A time may come when the nervous system may again occupy a similar or identical position. In such an event, there is liable to occur a *suggestion*, which will bring to mind the same vivid perception that had been once before associated with the pending, and peculiar nervous state. In this way, many strange and incongruous fancies may be generated. Dreams, somnambulism, trances—with their disconnected phantoms, their images awry and half-fashioned, and their procession of ever-changing shadows, and airy, though fearful nothings—have such birth as this. Here, too, is total absence of sound sense and reason, although the will itself may be compelled to enter into the service of this farrago of nonsense. Under such conditions of misapprehension it is clear that there is absence of moral and mental responsibility.

It is possible that few persons, if any, are exempt from the trickery and deceit which are liable to be imposed upon the human mind by concealed agencies. The best poised and calmest intellects have, no doubt, their brief seasons of illusion, of hallucination, and of danger-our delusive beliefs. The deed is done. The irrevocable word is spoken. Whence comes the impulse of which it is the outcome? "I can give no reason. It is an impenetrable mystery to me." These are the exclamations, heard very often indeed, in that period of time called—"too late"—a period fully within the possibilities of every man living.

Let us now turn to another phase of our subject, and examine some of the characteristics of the human mind when placed at disadvantage through the influence of toxic agents. We are at once struck with several particulars that have not appeared in our observations hitherto. We have been describing the senses when, to a considerable degree, they were deceived in their individual capacity. We are about to speak of the senses overwhelmed *en masse.* We have been noting defects that were mostly circumscribed in their range and application—that, in fact, preserved to themselves some small quality of system and order. We are about to speak of mental confusion, incoherence, wreck. We have been treating of simple intellectual *incompleteness*, the causes of which have been mainly exterior to the bodily organism, and occurring without the complicity of the mind itself. We now proceed to examine the *dissolution* of the mental and moral natures, brought on (as some declare) by the deliberate and wilful act of the victim himself.

In this work I will confine my thoughts to the alcoholic inebriate. I will speak of facts and principles in their general aspects, taking no account of the many exceptions and cavils that invariably beset comprehensive propositions.

In the family of man there is a large number of individuals who live habitually under the control of a nervous system of exceeding and abnormal sensitiveness. Impressions are absolutely startling in their intensity; and the mind seems continually to be waiting in painful suspense, lest some new and unwelcome sensation should suddenly present itself. Perceptions, instead of leading to rational and practical knowledge, appear to palpitate throughout the whole mental and moral being, and arouse, by an irrational but boundless sympathy, unexpected and undesirable associations. To the neurotic, the future is clothed very often in impenetrable darkness, and is filled with possibilities of hopeless woe. Of these, his fancy is incessantly seizing upon some which he holds to his heart as realities.

Feeling, in a very wide sense, is living; and feeling, in the neurotic, is a pitiless and unceasing torture. A man finding himself in the midst of fire will jump out of it; and little will he reckon which way he leaps, or what may be the consequences to himself or to others. Considerations of that kind do not enter into his motives in avoiding the flames. Casuists may dispute as to the quality of will involved in the case. Certain it is, that such an escape is not in obedience to free will—to will invested with the capacity of choice. It is merely an example of the instinct or impulse of self-preservation which is common to the nature of all animated beings.

In a manner analogous, when a mind is chaffing under the oppression and tyranny of an universal nervous irritation, it will be compelled, sooner or later, to seek some measure of relief; and that, too, without much consideration of the means it may be called upon to employ. It is wholly immaterial to one suffering in a prolonged nervous agony, whether—"being sane, he knows the effects of alcohol on him, and therefore he is responsible for them"—or not. The legal apothegm does not cover all the facts involved. Like one in the midst of a sea of fire, the inebriate has become frantic for relief. He does not drink to create effects; he drinks to destroy effects. He knows that alcohol will afford rest from his consuming nervous inquietude; and he appeals to it as the one available, instant refuge.

An immediate effect of alcohol upon the human body is the production of partial paralysis. While this appears to extend throughout the entire system, it also seems to vary somewhat in its intensity, as it affects different portions of the organism. For the alcoholic impression, as a whole, does not depress or hinder the bodily functions equally. Judging from the tumultuous, but discordant movements that characterize physical and mental activity while under the influence of alcohol, the inference is, that this incoherence results from irregularity in the power exerted by that agent over the several departments of the corporeal structure.

Alcohol is a speedy and reliable anæsthetic. By it the morbid sensitiveness of the neurotic constitution is allayed. Sensation is blunted; perception is in an equal degree dulled—and they cease to worry and distress the mind and nerves by their morbid acuteness. A welcome repose reigns where but a little time before there were doubts, fears and painful anticipations. This is one of the immediate or primary effects of alcohol.

Another alluring element of rest to the perturbed mind of the neurotic, is the influence that anæsthesia exercises upon the faculty of *attention.* Everybody knows how tiresome it is to hold the attention steadily in any given direction, when the nervous system is in a state of prostration. When convalescing from serious illness it is common to lose one's self in the midst of some brief narrative, and inquire, with a sigh of fatigue —"where was I; what was I talking about?" The labor of listening, when one is sick, is intolerable. The dullness of the perceptive faculties induced by anæsthesia, separates the mind in a notable degree from the world surrounding it. The association between the material and immaterial is interrupted; and the mind, like a ship without a rudder or compass, floats away on the boundless sea of an uncurbed imagination.

This leads to the consideration of another, but related one, of the primary effects of alcohol upon the the mind; and it is an immediate result of blunting the sensibilities and perceptive faculties by means of anæsthesia. The authority of *attention* having been measurably withdrawn from the world of thought and feeling, the mind wanders free and untrammelled. No longer occupied with the affairs of present and practical life, the imagination seizes upon the stores of memory, upon the suggestions of the organic processes within the body, and even upon the unsubstantial fancies of dreams and reveries past and gone. Of these it constructs phantoms, and combinations, and contrasts—absurb, brilliant or trifling, as the case may happen. In truth, the inebriate mind is in a state very similar to the one occupied in trances, visions and somnambulism. The mind works subjectively—within itself exclusively. Illusions, hallucinations and delusive beliefs, framed from the odds and ends—the *debris* of the past in thought and feeling, delight the roving and ethereal fancy.

And here a brief suggestion may not be unprofitable. The inconstant and elusive state of mind just described is commonly attributed to the stimulating effects of alcohol. This agent appears to act as an excitant upon the heart and brain. This, however, is to some extent deceptive.

(*a*) Alcohol is a poison; and when taken in considerable quantity, the entire organism is thrown into a tumult of action in the endeavor to rid itself of the dangerous intruder. The system is invariably prostrated when this work is done—showing that the extra labor was at the expense of the system itself, mainly, and not through the aid of allies or auxiliaries. (*b*) The destruction of the sensibilities also operates as a *pseudo* stimulant by setting free (through anæsthesia) the body and mind from irksome and laborious association with the material surroundings. (*c*) Again, alcohol acts as a *quasi* stimulant by the seeming contradiction of its benumbing qualities. In other words, alcohol paralyzes with peculiar emphasis, certain *restrictive* or inhibitory nerve centres. It interferes with the monitors, the regulators of the imagination, and permits that faculty to roam without law or restraint.

These three primary or instant effects of alcohol are they which prove so alluring to the inebriate. The man of neurotic temperament is likely to partake of alcohol, with a view of obtaining the quickest and best relief from a great nervous agony or strain. The point is to secure the instantaneous application of the first impressions made by the alcoholic agent. The motives actuating the inebriate do not therefore reach to the secondary stages of drunkenness; nor still less to the last or tertiary stages.

In concluding what I have to say about the condition and responsibility of mind, when it is placed at disadvantage by alcohol, I will simply add this: There are certain lines that are common to alcoholic intoxication in all circumstances. But it is important to remember that, psychologically, the *mental and moral* situations are radically different in the several conditions of the inebriate constitution. In the primary stage of inebriate excess, in a sound constitution, the imagination is vivid and bright—though erratic—and good fellowship prevails. In the secondary stage, later on, the circulation is filled with poisons other than alcoholic; the whole organism is in a quiver of anguish, while the disposition is sullen, morose, hateful. In the third stage—when the brain, heart and glandular system have undergone profound physical degeneration, the mind is imbecile and degraded, but is comparatively harmless.

In conclusion I will call attention to the fact that intoxication is not the only bad outcome of the alcoholic influence, and also, that intoxication is not the result always the most to be deplored. Recent inebriation is supposed to be rather agreeable than otherwise. It excites the generous and sympathetic feelings. But when drunkenness is complicated by the presence within the organism of subsidiary poisons contingent upon the prolonged use of alcohol, the spectacle is quite different. There are toxic principles in alcohol that are more destructive than those which produce the simple state of inebriation. They are the fruitful sources of physical degenerations, both of the body at large, and of the brain in particular, that are never the consequences of intoxication from opium, chloral, haschisch and other hypnotics. Indeed, alcohol is capable of producing all the degenerative injuries peculiar to the habitual inebriate, without ever proceeding to the point of actual drunkenness.

Dr. Mandsley expressly mentions: "That more dangerous form of habitual indulgence in small quantities of wine and spirits throughout the day, by which some active men of business endeavor to spur their overtaxed energies." To these poisonous properties of alcohol, the attention of the public should be directed. In that way only can the true gravity of carelessly and ignorantly handling that most powerful and most pernicious agent, alcohol, become fully appreciated.

ATROPHY OF THE BONES IN TRAUMATIC NEURITIS.

Dr. Moty, of Paris, France, read a paper before the French Surgical Congress, recently held in Paris, on the subject of osseous atrophy in traumatic neuritis. Traumatic neuritis has been studied by Weir, Mitchell, Charcot, Vulpian and others, and is more frequent than is generally supposed. It is more often descending than ascending, and accompanied by atrophies of the bones which are extremely curious. These are especially perceptible after fracture of the boneleg. It involves the sole of the foot and produces a shortening of a centimetre. The atrophy is especially marked at the internal portion of the limb. The writer has collected at least twenty observations. In the case where the shortening was the most marked, it reached 3 cms. a year after a fracture. The circumfrence of the knee only presented a difference of 2–3 millimeters. These facts seem curious, but worthy of mention.—*La Semaine Médicale*, No. 19, 1892.

F. H. P.

NOTE ON A CHINESE BRAIN.[1]

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THE specimen on which the following note is based is the brain of an adult Chinaman of the coolie class. For the opportunity of studing it I am indebted to Professor Henry C. Chapman.

Our purpose will be best served by a comparison with previous descriptions. It will be remembered that the first Chinese brain ever studied was that by Mills and Parker[2] in 1886. Shortly after, in 1887, Benedict[3] describes three others, and in 1889 two Chinese brains were described by the writer.[4]

Let us glance first at the more important fissures of the lateral and mesial surface and then take into consideration points of more general value.

The Fossa Sylvii.—In the brain described by Mills and Parker, the fossa Sylvii is decidedly long in both hemispheres. In the second specimen of the brains described by the writer, the fossa is also very long in both hemispheres. Benedict makes no special mention of this point and it is probable that very unusual length is not characteristic of the fossa in his specimen. In the specimen in hand the fossa likewise is not unusually long.

The Central Fissure.—In the Mills-Parker brain the central fissure is nearly confluent with the Sylvian in both hemispheres. In Benedict's specimens, judging from the drawings, the same condition was present in the right hemisphere of his first brain, in both hemispheres of his second brain and in the left hemisphere of the third. This condition also obtains in the right hemisphere of brain number one and in both hemispheres of brain number two of my own previously described specimens. In the left hemisphere of brain number one (my own specimen), the central fissure is freely confluent with the Sylvian. This also obtains in the right hemisphere of Benedict's third brain. In the specimen in hand the central fissure is confluent with the Sylvian in the right hemisphere, and all but confluent in the left. In all of the brains, then, it may be stated the central fissure is nearly or actually confluent with the Sylvian.

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[1] Read at the meeting of the American Neurological Association, New York, June 22, 23 and 24, 1892.

[2] Preliminary study of a Chinese Brain, by A. J. Parker and Chas. K. Mills, Journal of Nervous and Mental Disease, Vol. xiii., No. 10, 1886. (Embodied in the address of Dr. Mills.)

[3] Drei Chinesen Gehirne. Prof. Dr. Moriz Benedikt. Medizinische Jahrb., 1889.

[4] A Description of Two Chinese Brains. Journal of Nervous and Mental Disease, July, 1889.

The Parellel Fissure.—Mills and Parker noted in their specimen extreme length, and confluence with other fissures, of the parallel fissure. The same condition was also present in both of my own previously described specimens. In the brain in hand it is of excessive length in the right hemisphere and is confluent with a number of transverse or perpendicular fissures, one of which at least constitutes a well-marked Wernicke fissure. In the left hemisphere the early portion of its course is interrupted, but it finally extends backward to an extraordinary degree. Tranverse confluences are also noted, the most posterior being as before a well-marked Wernicke.

The Interparietal Fissure.—In the Mills-Parker brain the interparietal fissure presents nothing beyond a division by a bridging convolution into two parts. It was not confluent with the parieto-occipital. In the drawings of Benedict it is seen to be confluent with this fissure in three instances, twice in the same brain, the third, and once in the second. In my own previously described specimens this confluence was found twice, namely, in both hemispheres of brain number two. In the specimen in hand the interparietal is broken in both hemispheres. On the right side its posterior portion is superficially confluent with the parieto-occipital. On the left it is imperfectly separated by an incompletely developed *pli dc passage superieur externe.* On the right side again the parieto-occipital is prolonged from the point of confluence into a large and deep external perpendicular. A similar, though less well-marked, external perpendicular element exists in the left hemisphere. External perpendicular fissures exist in the brain of Mills and Parker, in both of my previously described specimens and apparently in some of Benedict's.

The Collosomarginal Fissure.—Mills and Parker note unusual complexity of the collosmarginal fissure in one hemisphere and instances of vegetative repetition in both. Similar features were noted in both of my previously described specimens. In the specimen in hand the collosomarginal presents a number of instances of vegetative repetition, while in the right hemisphere it gains an apparently excessive length by confluence with a fissure of the quadrate lobule which pursues the same course and direction.

The Parieto-Occipital, the Hippocampal and the Calcarine Fissures.—In the Mills-Parker brain the calcarine bears in the left hemisphere a normal relation to the hippocampal fissure; that is, it does not become confluent with the latter, and the gyrus fornicatus is at this point developed fully up to the brain level. In the right hemisphere the photograph shows that this confluence all but takes place, the gyrus fornicatus being reduced to a mere shred. In the specimens of Benedict this confluence is depicted as taking place twice; that is, in both hemispheres of his first brain. In my previously described specimens this confluence takes place in every instance, the gyrus fornicatus being always completly submerged. In the specimen in hand this confluence exists in both hemispheres, although in the left it is superficial.

Benedict states that in the right hemisphere of his second brain the normal confluence with parieto-occipital and the calcarine does not take place. However, his drawing is not in harmony with the statement, nor has such a condition been found in any of the other brains examined.

In addition to the features noted, the parieto-occipital, the calcarine and the hippocampal offer no peculiarities that may not also be observed in white brains.

GENERAL OBSERVATIONS.

1. *Transverse Fissuration.*—In addition to the above enumeration of confluences it should be stated that in all of the brains thus far examined an unusual tendency to tranverse or perpendicular fissuration is present. This has already been touched upon in dealing with the relations of the interparietal and parieto-occipital fissures. It is, however, also emphasized in the frontal and parietal lobes by the presence of unusually well-marked precental and retrocentral fissures, and by the significant tendency of the central fissure to become confluent with the Sylvian. In the specimen in hand, for instance, the precentral and the retrocentral fissures are almost as well developed and as striking as the central itself. This is particularly the case in the left hemisphere.

2. *Sinuosity of Fissures.*—Unusually marked sinuosity of the central fissure was noted by Mills and Parker, Benedict and the writer. This sinuosity found expression also in the excessively developed precentral and retrocentral elements, and occasionally elsewhere. In the brain in hand these peculiarities are well marked.

3. *Gross Peculiarities.*—In all of the brains studied (by Mills and Parker, Benedict and the writer) an obliquity or eversion of the basal surface of the frontal lobe was noted. This observation was made independently by Benedict and Mills and Parker. Benedict further stated that in his specimens the basi-temporal surface also partook of this quality. Eversion of the basi-frontal surface was also noted in the previously described brains of the writer, and in one of these eversion of the basi-temporal surface was also noted; in the other of these specimens it was probable that distortion while hardening had caused this quality to disappear. In the specimen

in hand the eversion is marked in both frontal lobes. In the left temporal lobe it is well marked, in the right lobe distortion and flattening while hardening has evidently taken place.

In both of the previously described specimens of the writer, complexity was given to the frontal lobes by the appearance of well-marked medi-frontal elements. In the present specimen an added frontal fissure having the value of Wilder's medi-frontal is present on the left frontal lobe, but is comparatively short. In the right lobe traces of it only are found. In this respect the present specimen differs from those previously described by the writer; that is, the frontal lobe is somewhat simpler.

In both of my former specimens the cuneus and in fact the occipital lobe, was noted as rather small. This also holds good in the present specimen.

In conclusion, these brains, owing probably to the unusual sinuosity of some of the fissures, together with the excessive transverse fissuration, have a physiognomy, as it were, of their own. They certainly in general appearance look different from the average white brain that we handle, and very different from the brain of the negro.

HYSTERICAL FEVER.

Scarbo, in the "Centralblatt für klin. Med.," reports a typical case of disease. He says that hysterical fever exists in two forms, as a continuous and intermittent fever. It is functional in character and associated with hysteria. The differential diagnosis is made by its being coincident with hysteria, by irregularity and sudden cessation of the fever, by absence of results from antipyretics, and by the enormous high pulse rate as compared to the slight increase in temperature. The fever may occur in simple hysteria, but has been observed in cases of hystero-epilepsy. B. M.

THE SEAT OF ABSINTHIC EPILEPSY.[1]

By ISAAC OTT, M.D.

Easton, Pa.

THE seat of epilepsy has not been revealed either by coarse or fine anatomy. Much more has been accomplished by physiology in the elucidation of convulsive phenomena. Thus Brown-Sequard found that section of the sciatic, or injuries of the medulla, cerebral peduncle, corpora quadrigemina and spinal cord were often sufficient to produce epilepsy. His epileptogenic zone at the angle of the jaw on the side of the lesion is a favorite means to produce epilepsy at will. Further, the young of animals rendered epileptic by his proceedures were often spontaneously epileptic.

The anæmic theory of epilepsy at one time held a large sway, due to the experiments of Küssmaul and Tenner, who produced epileptiform convulsions by creating an artificial anæmia of the brain. The pallid face of epileptics has been supposed to support this theory, but neither flushing nor paleness of the skin is any proof of the state of the circulation in the profundity of the body. Local hyperæmias and anæmias of the skin are quite common, and are only skin deep. Kürsmaul and Tenner found that somewhere between the spinal cord and crura cerebri was a convulsive point; Nothnagel located what he calls a convulsive centre in the pons variolii; Ziehen found that irritation of the posterior part of the corpora quadrigemina caused convulsions. But Hughlings-Jackson has put forth the theory that these convulsions are due to explosions of nerve force in the gray matter of the cerebrum. Horsely found that irritating the cortex generated tonic as well as clonic impulses.

Magnan in experimenting with absinthe arrived at the conclusion that the drug excites simultaneously the spinal cord and the cerebral centres; but Horsely has shown that convulsions do not appear if the cord is cut at the eighth dorsal vertebra. He has also discovered that if the motor centres are removed, convulsions do not take place on the opposite side of lesion, excepting a slight tonus. According to this observer, after the injection *per jugular* of two drops of essence of absinthe there follows the following phenomena: the facial muscles begin with single clonic spasms, passing into a state of tremulous tonic spasm. This order of convulsions passes rapidly down the body until the tonic spasm in the limbs is extremely marked. After a short period tonic spasm gives way to a long series of clonic twitches. Accompanying these convulsive phenomena there is a profuse salivation, and sometimes escape of urine, while in cases in which narcosis has not been employed, unconsciousness and coma are early symptoms. He also tested the effect of absinthe upon the cord by means of the electrical method, using both the galvanometer and electrometer. His results showed that the employment of absinthe gave maximal electro-motive effects in the sciatic nerve through the overwhelming discharge of the highest cortical centres. He also observed that absinthe does not exhaust the cortex, for after stimulation of the absinthe an additional electric excitation caused the centres to produce more energy.

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[1] Read at the meeting of the American Neurological Association, New York, June 22, 23, 24, 1892.

Now absinthe not only produces a typical epilepsy in animals, but it also causes it in man. It is evident that in this medicament we have a most valuable means to study the origin and seat of the convulsive disorder. That the convulsions are not due to circulatory changes is well seen in experiments which show no change of pressure before the commencement of a fit, but during the fit a rise of tension, a fact already announced by Todorsky and Bechterew. These observers as well as Horsley have found the brain hyperæmic, rather than anæmic. All these facts go to show that these convulsions are not due to circulatory changes. There remains to determine their mode of origin in the nervous system. Magnan believed their source to be spinal, but Horsely contradicts this; and of the thirty-five experiments made with absinthe I have seen no spinal convulsions. If the whole cortex is removed in an animal, then tonic convulsions ensue not usually succeeded by clonic acts. If the corpora striata or optic thalami are divided still spasms of a tonic nature continue with no clonic stage. The same results ensue after removal of the corpora quadrigemina. If, however, the pons is divided, then all convulsive acts cease.

If in an animal the motor centres are removed on one side, then tonic spasms ensued on the side opposite the lesion, whilst tonic and clonic convulsions took place on the side of the lesion. The convulsive movements upon the side opposite the lesion are weaker than when the cortex is intact. Irritation of the cortex in the hands of other observers has shown that it calls out tonus and clonus. Further, if the cortex is cut off and we then excite the underlying fibres we only obtain tonus, a fact observed by two French observers, Franck and Pitres, and confirmed by others. If a fit is in full progress Munk has observed that instantaneous slicing off of the cortical gray immediately arrested the fit. All these facts go to show that the seat of origin of tonic and clonic movements in epilepsy is in the cortex, and their expression takes place mainly by means of ganglia seated in the pons varolii.

That no clonic convulsions can be observed after removal of the brain and part of the pons is not always true, for I have seen violent clonic spasms ensue in one case upon the injection of essence of absinthe. Electrical irritation of the pons can give clonic convulsions, as has already been noted by Todd.

The word cortico-frontal might express the origin of convulsive epilepsy due to absinthe.

Of the thirty-five experiments upon rabbits, the above notes will suffice for their explanation without going into detailed description.

THE VERTIGO OF ARTERIO-SCLEROSIS.[1]

By ARCHIBALD CHURCH, M.D.,

Professor of Neurology, Chicago Policlinic; Lecturer on Insanity, etc., Chicago Medical College.

THE discussion of a pathologically subjective state is in itself practically impossible, and the difficulty is not lessened when that state is a symptom of many widely differing conditions, some functional and some grossly organic. To use the term vertigo is therefore undesirable, but for lack of one more definite its employment is a necessity, and in this connection is not open, perhaps, to the emphatic objection that elsewhere obtains. It is in its generic sense that I wish to make use of it.

In a very recent and comprehensive article, Suckling[2] takes up the subject of vertigo and in a way describes it as the consciousness of disordered equilibration, showing that it may exist from want of harmony in the impressions received from any of the senses, and possibly from the sensibility of the viscera as well; but it is not the present purpose to direct attention to the physiology of equilibration nor to take up the interesting topic of coordination, which is closely associated therewith. He clinically classifies the forms of vertigo as aural, ocular, vascular, dyspeptic, nervous, epileptic, toxic, of organic brain disease, and from reflex irritation, but says specifically nothing of the vertigo of arterio-sclerosis. Most other writers either on the topic of vertigo or that of arterio-sclerosis are equally silent; yet vertigo may be and often is, as will be urged further on, a signal symptom of this arterial state, the proper recognition of which may lead to such treatment as will obviate organic diseases of the brain, kidneys, liver, and other important structures, and many times definitely prolong life.

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[1] Read before the American Medical Association, May, 1892.

[2] Birmingham Med. Rev., No. v., 1891.

It is only of late years that arterial changes have been given the importance in pathology and in clinical medicine that they deserve. The degeneration of senility, the modifications found in gout, rheumatism, chronic metallic poisoning, syphilis, and which are associated with alcoholism, Bright's disease, and many other serious maladies, makes it imperative that we recognize at the earliest moment the presence of a change in the artery which may in many instances be amenable, in the early stage, to treatment, but which soon otherwise passes beyond the possibility of medical control. Atheroma is not here synonymous by any means. It is the pre-atheromatous condition with which we have to deal, and it is the vertigo symptomatic of that arterial fibrosis to which your attention is directed. As a matter of demonstrable fact this arterial state is widely and generally disseminated in these cases, but the complexion of the disease varies with its local intensity. In some instances a contracted kidney, in others angina pectoris, in others the cerebral symptoms are the prominent features; and of the brain symptoms, the earliest is vertigo; and the last, cerebral hemorrhage or dementia.

When a man past the prime of life, without any previous serious illness, becomes suddenly faint, has a swimming in the head, a feeling of giddiness, of distinct gyration, of darkness and impending death, one or several of these sensations, he usually at once seeks advice in grave apprehension, sometimes well founded, of approaching cerebral apoplexy, and usually gets a cholygogue cathartic, or is told that his stomach is wrong, and sometimes is told rightly. But cases are constantly presenting themselves in which such vertiginous attacks are happening at shortening intervals, the patient gives up his tobacco, his spirits, if he is a drinker, cuts down his meat, takes to some of the many waters recommended, has Turkish baths, and gains only moderate relief or none at all. If he is carefully examined he will probably present a well-defined tortuous frontal artery, a distinct arcus senilis, a strong, even a clanging, second sound of the heart, sometimes reduplicated, and give a sphygmogram indicative of increased arterial tension. The pulse may be abnormally slow or rhythmic, the urine scant, and a trace of albumen is not rare. He finds that exertion of a moderate amount precipitates the attack, that he cannot endure a temperature at all above the usual, and often a change of position from recumbency to the upright is the occasion of a "blur" or of giddiness.

The attack itself is, as already indicated, widely variable in different patients, but usually consists with itself for the given individual. A fullness and throbbing in the head, a feeling of heat in the scalp, and a blur before the eyes are usually mentioned, and at such times marked paleness is noticed, followed as a rule by considerable redness of the face. There is a tendency to get into the open air, and badly ventilated or close apartments are unendurable. A habitual smoker will sometimes find tobacco smoke repugnant. In more severe forms the patient may stagger, fall, or gradually sink to the ground; he cannot speak for a few seconds, though consciousness is rarely completely lost. The recumbent position is usually sought, or the patient clings to some object, and after a period of from five to twenty minutes the feeling passes away leaving him rather languid, with an inclinatlon to sleep, and usually mentally depressed and apprehensive. At first he attributes the attack to anything and everything that in his estimation can cause a departure from health, and usually establishes a close watch upon his diet, habits and mode of life, is inclined to avoid exercise or exertion of any sort, fearing to precipitate an attack, or to go by himself on the streets, and, in short, becomes an invalid with hypochondriacal tendencies.

In a remarkable monograph on this subject, Professor J. Grasset,[3] of Montpellier, divides the vertigos of arterio-sclerosis into three forms: (1) Simple vertigo; (2) Vertigo with epileptiform crisis, and (3) Vertigo with slow pulse and syncopic, or epileptiform attacks. Some of the features of the slighter attacks, as already roughly sketched, undoubtedly suggest a similarity to mild epileptic seizures, for instance, the paleness of the face, the oppression and the final confusion, depression and tendency to sleep; but personally I have never encountered well-marked convulsive phenomena reasonably attributable to this cause.

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[3] Du Vertige Cardio-Vasculaire, Paris, 1890.

With Huchard,[4] this writer is inclined in some cases to attribute acquired habitual extreme slowness of the pulse, which in numerous reported instances has ranged from twenty to forty per minute, or even less, to the effect upon the medulla of an arterio-sclerosis acting mechanically to lessen the blood supply to the cardiac centres. As yet this hypothesis has received, as far as I have been able to ascertain, no positive anatomical or experimental support, though it is seductively reasonable. This bradycardia is almost always marked by syncopal and vertiginous features and arises in individuals predisposed to or actually the subjects of marked anterio-fibrosis.

The diagnosis is often one of extreme difficulty, in spite of a hasty contrary statement by a recent American writer, and I have known the symptomatic vertigo confused with Meniérie's disease by a very competent specialist in nervous diseases, for it may, as in that particular instance, be of a systematized character; that is to say, marked by a sensation of falling in a given direction, or of being rotated in a constant manner to the right or left, and even associated with a suggestive stagger. If to this a little middle ear catarrh is added, a diagnosis of aural vertigo might easily be reached, but a closer and somewhat wider examination will detect the integrity of the auditory nerve and the presence of the arterial fibrosis with the underlying predisposition of alcoholic excess, syphilis, gout, rheumatism, chronic lead infection, or other constitutional state of etiological significance.

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[4] Traité des Maladies du cœur et des Vaissaux.

In the treatment the basic element is the object of attack, and whatever this may be the iodide of potash will find an indication in the arterial change, which, if recognized in its incipiency, can be practically controlled, providing the patient is manageable. It is the sheet anchor, and from its exhibition in moderate doses, of from thirty to ninety grains a day for a number of months, much benefit and often a substantial cure can be expected.

I am led to emphasize the importance of this vertigo, because it is a very early symptom of a condition which neglected leads to distressing and even fatal results, and which unrecognized is the source of endless anxiety and misery to the patient and of chagrin and disappointment to his medical attendant. If it were desirable, numerous case records could be cited, but it is hoped that attention once having been called to a proper interpretation of the symptom it may be less frequently mistaken, and I would urge that the condition of the arteries and the heart be made an object of early and thorough investigation in every instance where obscure vertiginous attacks, or a persistent giddiness is present.

805 PULLMAN BUILDING.

CHRONIC PROGRESSIVE OPHTHALMOPLEGIA.

The symptoms occurred in a paralytic, where, with the exception of the left ptosis, all the eye motions were free. Microscopical studies of the brain revealed degeneration of the ventral and dorsal parts of the anterior portion of the oculo-motor nucleus. Section showed the distal part as well as Westphal's centre to be normal. The position of the degeneration accorded well with a special function centre of the motor oculi nerve, the curious phase of the case being the absence of double-sided eye paralysis.—*Centralbl. f. Nervenheilkunde und Psychiatrie.*

B. M.

CASES ILLUSTRATING THE CO-EXISTENCE OF CHOREA AND ALIEN SPASMODIC PHENOMENA, WITH REMARKS ON THE DIAGNOSIS.[1]

By FRANK R. FRY, A.M., M.D.

St. Louis.

CHOREA AND ATHETOID MOVEMENTS.

FRED Y., age fourteen, large for his age, spare-built, sallow complexion, family history, as far as obtained, unimportant. A younger sister was under our care for an attack of polio-myelitis.

He attended the Dispensary[2] irregularly from December 21, 1886, until February 25, 1887—two months. This was about the duration of the well-marked attack of chorea, for which he was treated at this time. There were no unusual features, except that I noted a more than ordinary inco-ordination in the hands which impressed me as being disproportionate to the spontaneous movements. He recovered entirely and was able to resume his occupation, that of an apprentice in a machine shop, without finding any inconvenience in doing his work, which he had been compelled to abandon with the onset of the attack.

One year later he returned with another attack of chorea. During the year there had been no manifestation of the disease until a few days prior to his return to us. He was again finding it impossible to work at his trade. During the first few days of his attendance the symptoms became aggravated, and the attack was very well-marked. Especially we noted again the amount of inco-ordination in the hands. In examining more carefully this latter condition I found that on voluntary effort, and especially when it was sustained for some time, there appeared a remarkable mobile spasm, involving all the fingers of both hands and slightly the wrists. The contractions would slowly spread, as it were, in an irregular manner from one digit to others. Sometimes one hand only would be involved, sometimes both. No better description of the slowness of the movements, their distribution and irregularity can be given than that they produced a very perfect counterfeit of athetosis, at least, in so far as the mere appearance of the hands was concerned. When both upper extremities were extended at full length the condition became striking, on account of the greater involvement of the wrists.

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[1] Presented to the American Neurological Association at the meeting in New York, June 22, 23 and 24, 1892.

[2] The O'Fallon Dispensary, connected with the St. Louis Medical College, St. Louis, Missouri.

The patient was under observation for six weeks. The athetoid movements persisted for two weeks or a little more, gradually diminishing. The chorea outlasted them several weeks, disappearing in the usual manner.

CHOREA AND MYOCLONUS MULTIPLEX.

Delia H., age 14, large, well-developed girl, blonde, healthy, and pleasing appearance. First examined at the Dispensary, June 24, 1891. The mother stated that she was troubled with "nervousness," and for the past few days with a severe shaking in the lower part of her body. There were apparent the ordinary movements of chorea, *i.e.*, spontaneous twitching and jerking usually of a quiet, and yet distinctly spasmodic character, occasionally sharper, quick contractions of the scapular muscles on both sides, and in the flexors of the right wrist. There was considerable inco-ordination. The face was slightly involved, and the upper extremities more than the lower. The chorea of the lower extremities showed more in locomotion, and especially in the feet.

During our examination the patient was seized with a violent rhythmical spasm of the muscles of the left thigh and hip. Sitting in a chair, her foot stamped the floor forcibly and the whole body was shaken with the violence of the movement. She had a succession of such paroxysms during the first examination. Any force which could be safely applied was insufficient to stop the spasm. When the limb was held nearly quiet the spasm would almost invariably begin in the opposite thigh, but never with the same severity as in the originally effected one. The mother stated that slight spasms had appeared spontaneously on this side also.

The history obtained from the mother was briefly as follows:

For two months past the patient had been nervous and irritable. Especially she had remarked how frequently she would become offended, and at times irascible on trivial provocation. For the past week or so she had seemed better in this respect. A month or more previously she had noted the constant "nervousness," or fidgetiness, and more recently an awkwardness in her gait. The latter, at least, had been worse of late. Friends had told her that the child had St. Vitus' dance, but she had not thought it possible. Four days prior to the above-mentioned date of her first visit to us she had been startled on seeing her little sister fall from a swing. She was in an excited state for half an hour, during which time the violent jerking came on in the left thigh, since which time it had reappeared at intervals of from half a day to a few minutes and with varying severity.

The patient had always been fairly healthy, amiable and easily managed. She had advanced rapidly at school, and for the last year especially had applied herself closely to her studies. Her catamenia had first appeared six months ago and had since returned monthly without noticeable disturbance to general health. She had not had rheumatism, scarlet fever or whooping-cough; had measles when quite young.

Her first visit to the Dispensary was June 24th, her last July 27th. She was therefore under observation for thirty-four days, at first every-other day, later at somewhat longer intervals. The rhythmical spasm of the lower extremities gradually became less severe, and at the end of two weeks had disappeared entirely. The choreic movements continued on, but improved, and when we last saw her they showed in the fingers of the right hand only. The treatment consisted of galvanism, bromide of potash and arsenic. She took as high as ten (10) drops of Fowler's solution, *t. i. d.*

I have applied the term moclonus to the clonic spasm in this case more as a matter of convenience in brief description and am not prepared to insist upon or defend this use of it, although the locality and character of the spasm were those of myoclonus multiplex. There was also considerable fatigue following the severe attacks.

That this was a genuine case of chorea I have no doubt, and I hope the above description makes the fact apparent to others. There were the common prodromal symptoms of general disturbance of the nervous system, including an irritable mental condition. There were the choreic movements, well-defined. There were the improvement and the disappearance of the symptoms in the time and manner usual in chorea. There was another feature well-marked which is frequently observed in the choreic condition; a tendency to unnatural and unwarrantable alarm or fright from trivial causes. On her third visit to us, we found her in a somewhat excited state with a rapid pulse. Her mother explained that on the way she had seen an intoxicated man, but that there was no possibility of his coming near to or molesting her, and that ordinarily the incident would not have disturbed her. On the 4th of July she became similarly excited on witnessing the amusing capers of a small dog during the discharge of some pyrotechnics. Her conduct on these occasions and on that of the slight accident to her sister, mentioned above, was altogether unnatural for her, and her mother was much gratified to remark the improvement in this respect which followed. There was also present in this case a condition which I have frequently remarked in cases of chorea and shown to classes at my clinic, although I have not elsewhere publicly referred to it, namely, an injection of the deeper conjunctival vessels. I have not seen it mentioned by others, and am not prepared to say what significance, if any, attaches to it.

CHOREA AND TREMOR.

I have seen several cases in which I believe a true chorea was complicated with, and to some extent masked by, the presence of a persisting tremor. Dr. A. B. Shaw, St. Louis, recently presented before the St. Louis Medical Society a case which I consider to be of this description. I am indebted to him for the privilege of consulting his notes and of referring to the case at this time.

Miss ——, age nineteen, was under continued and protracted mental and physical strain during the months of June and July, 1891, incident to the illness and death of her father and preparations for an important competitive examination. As a consequence she became much debilitated. In the month of August a series of troublesome boils began to appear on the face and in the axillæ. About September 11th, while she was still suffering from the boils, a jerking began in the left arm, coming in paroxysms five or six times a day, the biceps and supinator longus muscles apparently being principally affected. A few days later the right arm became similarly affected. About one week later she began to stammer, and still later the muscles at the angle of the mouth on the left side became involved. In November a troublesome twitching began in the fingers of both hands and a litttle later the legs and feet began jerking. At this time (toward the latter part of November), it was remarked that her memory was quite defective, and that there was an unnatural irritability of temper. The spasmodic movements seemed to increase in severity until sometime in January, 1892, when she was taken with what was believed to be an attack of la grippe. During this attack the chorea, or choreiform spasm, entirely disappeared for the space of two weeks, when it reappeared, not, however, with anything like its former severity.

Dr. Shaw classified the case as one of "rhythmical chorea." In presenting the patient, he said: "The choreiform movements so closely resemble the peculiar movements in ordinary chorea that superficial observation of the case might permit a mistaken diagnosis in this direction; but on close analytical inspection it will be noted that although the movements are choreiform they are devoid of the bizarre characteristics which are such a prominent feature in ordinary chorea. They are sudden, shock-like, and clonic, rhythmical in variety. That although suddenly and frequently repeated in their entirety, they simply resemble an attempt at some purposive movement. . . . Tremor of the hands has been a marked feature throughout."

I agree with Dr. Shaw that the movements were somewhat sudden and shock-like; yet, to my mind, not more so than I had observed in indisputable cases of chorea. Certainly they were not the "electrical contractions" sometimes seen in hysterical chorea. I also agreed with him that there was a rhythmical movement, especially in the hands; but I believe this was simply due to tremor, which he correctly observed was present in the hands; and I would add, in other localities also. The choreic movements could be plainly discerned in addition to the tremor; showing, as it were, through the tremor. As he states, the movements closely resembled those of ordinary chorea. In my opinion, if it were not for the presence of tremor, they would have exactly resembled them. The amount of tremor and choreic movement were not constantly parallel, a fact which, when carefully observed, confirmed the opinion that the two conditions were present.

The Doctor had his patient to thread a needle and do some sewing to illustrate the slight inco-ordination present. I thought that she showed in this test considerable inco-ordination, as well as in other voluntary acts. I also found the grasp of both hands feeble, especially the left, although she affirmed that she was left-handed.

The case had been very intractable to treatment, but during the past two weeks there had been considerable improvement. The patient belonged to a family of decidedly neuropathic tendency.

In its simplest form chorea is readily diagnosticated. Some of the less typical cases are only quickly recognized by those who have had more than ordinary opportunities for observation. In still rarer instances, even experts will hesitate. In this statement I do not mean to allude to so-called quasi forms, as post-hemiplegic, habit chorea, etc., and the difference of opinion concerning the nosological disposition to be made of them, but I have in mind only cases which on account of complications or other obscuring causes are difficult, but which at one stage or another of their progress would be declared by competent observers generally to be chorea. While it is a fact that experienced observers rarely meet with cases difficult of diagnosis, it is by the *tout ensemble* of the symptoms that they are guided in their classification rather than by easily formulated rules which may be relied on by less experienced persons in deciphering difficult cases. Although it is true that the peculiar movements may be said to be the only really distinctive feature of so-called true chorea, it is also a fact that their existence is, alone, not sufficient to establish the diagnosis in all cases—if it is in any case. For example, if we find them well defined in a child of ten years, with absence of any other symptom of impaired health, we are apt to call the condition chorea, and the diagnosis would not be thought inappropriate by the majority of modern authorities. With the same state of affairs in a much older subject the same diagnosis would not be so readily consented to. In another child where there is a history of rheumatism, followed by hebetude, unusual irritability of temper and a paresis in one or more of the extremities, the movements may be very slight, hardly discernible, and yet the diagnosis "chorea" is made very confidently. In fact it has been made in the absence of spasmodic movements of any kind. The pre-choreic stage of chorea has been described. What is the relative diagnostic value of the spasm on the one hand and the other choreic symptoms on the other? That this must be determined in each case is, I think, the nearest to a satisfactory answer we may come.

In contemplating these points certain questions obtrude themselves: whether, after all, these choreic movements are so essentially a distinct phenomenon; if so, what is it that distinguishes them? As witnessed in juvenile chorea, are they essentially different from their counterpart seen in certain other neurosis and in organic brain disease? Do they not simply constitute a phenomenon which appears as often as certain regions or areas, or certain strata or combinations of cells, as yet unlocated, become the seat of disturbances which may be set up by widely different causes? Is it not reasonable to expect to find then co-existing with other spasmodic phenomena? What diagnostic and prognostic value have they?

The amount of close attention that has been given to these questions and the difficulties in the way of their solution are amply shown in the literature of the subject, even up the most recent date. Therefore I have no intention of rehearsing the various arguments before a body of neurologists, quite familiar with them. I have only alluded to them by way of reminding my hearers of the considerations which have prompted me to report these cases. I believe that they have some interest bearing upon some of the points in question.

NEURASTHENIA TREATED BY NERVE SUBSTANCE.

The "Medicinisch-chirurgische Bundschau," of April, contains the abstract of an article by Constant Paul on the good results he had obtained in the treatment of certain nervous affections by the subcutaneous injection of extract of nerve tissue. The gray substance of the brain of sheep, macerated for twenty-four hours in glycerine and water, was used in the experiments. The dose for the first injection being 1 cm., gradually increased to 5 cms., twice weekly. The injections caused no local trouble. The improvement was gradual. The appetite, strength and body weight increased. Of the number of cases so treated, three were cases of chlorotic neurasthenia, three of simple neurasthenia, and several of ataxia. The benefit from the treatment was so marked that the author recommends the use of the extract of nerve tissue in the obstinate cases of nervous diseases.

B. M.

Periscope.

EXCERPTS WILL BE FURNISHED AS FOLLOWS:

From the Hollandish, Swedish, Danish, Norwegian, German, Portuguese, Roumanian, Spanish and Italian:
F. H. Pritchard, M.D., Norwalk, O.

From the Swedish, Danish, Norwegian and Finnish:
Frederick Peterson, M.D., New York.

From the German:
William M. Leszynsky, M.D., New York.
Belle Macdonald, M.D., N. Y.

From the French:
L. Fiske Bryson, M.D., N. Y.
G. M. Hammond, M.D., N. Y.

From the French, German and Italian:
John W. Brannan, M.D., N. Y.

From the Italian and Spanish:
William C. Krauss, M.D., Buffalo, N. Y.

From the Italian and French:
E. P. Hurd, M.D., Newburyport, Mass.

From the German, Italian, French and Russian:
Albert Pick, M.D., Boston, Mass.

From the English and American:
A. Freeman, M.D., New York.

From the French and German:
W. F. Robinson, M.D., Albany.

The Editor will not accept as Original Articles and Clinical Cases those that have appeared elsewhere.

Authors are requested to make none but typographical corrections on the proof sent to them. The manuscript must represent the final form in which the article is to be printed.

PHYSIOLOGICAL.

LOCALIZATION OF THE KNEE-JERK.

Sherrington (Brit. Med. Journ., March 12, 1992) found that the whole of the quadriceps extensor of the thigh, or the anterior crural nerve is necessary for the jerk, it depends upon the vastus internus muscle, and, perhaps, the subcrureus as well; and on the branches of the anterior crural nerve to these muscles. He found that contemporaneous section of the spinal nerve roots of the lumbo-sacral region, if the sixth be spared only, makes the knee-jerk brisk, but that section of the sixth root alone, all others being intact, abolishes the jerk. This was found to be the case in cats as well as in monkeys, but in the latter it was found that the root on which the jerk depends is the fifth, which corresponds to the sixth in the cat, as the fifth in the monkey corresponds to the fourth number in man. In the monkey, cutting across the posterior root of the fifth lumbar abolishes the knee-jerk at once, and it is abolished not only by section of the posterior root alone, but by section of the anterior alone. Section of half the posterior root or ganglion, likewise serves to abolish the jerk at once. The writer's experiments also corroborate the fact that division of the spinal cord in cats and dogs renders the knee-jerk brisk. In the monkey he found the knee-jerks to completely disappear in the course of a few minutes after complete division of the cord at the level of the ninth thoracic root. The knee-jerk reappeared, however, at the end of three weeks, was slight at first, gradually became brisk, and was decidely exaggerated at the end of four months' time. After transverse division of the cord of the monkey at the level of the second lumbar nerve root, the knee-jerk disappeared in a similar manner, and did not reappear, although observations were continued for longer than three months. J. C.

PATHOLOGICAL.

CHANGES IN THE NERVOUS SYSTEM, PARTICULARLY IN THE PERIPHERAL NERVES OF THE DOG AFTER EXTIRPATION OF THE THYROID GLAND.

Joseph Kopp (Virchow's Archives, vol. cxxviii, No. 2). The author took two dogs for experiment, in 1887 and 1888, in which the thyroid gland had been removed by Kocher four years before. The ordinary clinical picture was apparent. As Langhaus had pointed out, the change in the peripheral nerves confined itself to the motorial nerves, therefore K.'s examination was limited to these parts. The change in the nerve seemed to show itself in areas or districts. By weak magnification one could see in preparations stained according to Weigert, running lengthways of the nerve bundle, a whitish path where normally is seen a dark colored bundle that is just within the perineurium. In this clear or whitish area are to be seen fibres that are of a light brown color and many little points and specks or spots. With a higher magnification it can be seen that part of these fibres are connective-tissue, fibers and a part comes from cross-section through the lamella, to which clings some of the perineurium and endoneurium. The specks and points seem to be nuclei, and especially oval nuclei which are distinctly nucleated or granular. The most striking thing is the peculiar variety of cell as described by Langhaus, which are distributed in large numbers over the entire affected areas. They are called or considered by their discoverer as single and multi-locular white cells. The districts that are affected lay for the most part in the inner surface of the perineurium. They appear of the form of a cylindrical space or a segment of such a cylinder. Very seldom the affected areas lay within the bundle of fibres. The thickness of the affected area varied from 0.007 to 0.13 mm. The diameter of the affected bundles varied from 0.1 to 0.8. mm.

Affected areas were found in the hypoglossus, musculocutaneous, radial, median, ulnar, crural, ischiadic, and posterior tibial. As to the change in the central nervous system the author mentions that in the cortex of the cerebrum an ordinary degeneration was found. Everything went to prove that the dog previous to the beginning of the experiments was in a perfectly healthy condition. Concerning the lymphid infiltration in the neighborhood of the ganglionic cells as was described by Rogowitsch, the author can say nothing. In some places he found a swelling of the axis-cylinders, as, for instance, in the medulla oblongata, especially in the pyramids, in the fillet, in the olivary fibres, in the lateral acusticus bundles, and in some fibres of the formatio reticularis. A similar condition was found in the pyramidal bundles of the spinal cord. But as one went downward in the cord the swelling in the axis-cylinder became less apparent.—*Neuro. Centb.*, June 1, 1892. J. C.

MULTIPLE NEURITIS.

At the meeting of the Society of Internal Medicine of Berlin, held November 2, 1891, Fränkel reported three interesting cases of multiple neuritis.

1. A man, fifty years of age, an inebriate, presented concurrently with the ordinary symptoms of neuritis, a very marked amnesia.

He remarked that psychical symptoms are very infrequent in multiple neuritis, and should always be referred to a lesion of the cerebrum. In cases of this kind the general condition of the patient is habitually bad; there is much prostration. This was so in the case in question; the patient grew more and more feeble, and succumbed.

At the autopsy a deliquescence of the myeline of the peripheral nerves was found; the spinal cord was intact.

2. The second case was that of a young lad, aged fourteen years, of wretched appearance, who, besides paresis of the lower limbs and an ataxic gait, had complete paralysis of the left arm and atrophy of the paralyzed muscles; the case resembled one of progressive muscular atrophy.

3. A coachman of twenty-nine years presented himself with the symptoms of tuberculous neuritis very pronounced; there was also pulmonary tuberculosis. He had complete paralysis of the lower limbs, paresis of the upper limbs, hoarseness of voice from paralysis of the left vocal cord, and intense pains. Under a full nourishing ·diet and cod-liver oil he got better of the nervous symptoms, but his pulmonary disease went on from bad to worse.

The same speaker also reported a case which he regarded as a case of locomotor ataxia, but which his colleague Remak diagnosticated as multiple neuritis; the diagnosis continued to be very obscure.

Goldscheider remarked that the participation of the cranial nerves in the lesions of multiple neuritis is very uncommon. In one of his patients he observed a lesion of the motor oculi, in another a tachycardia due to participation of the pneumogastric, and ulteriorly a left optic neuritis. This patient got well.

Remak referred to the case diagnosticated by Fränkel as tabes, but considered by himself as multiple neuritis (*vide supra*). The patient had since completely recovered. This result confirmed his diagnosis.

Leyden closed the discussion by saying that the clinical picture of multiple neuritis is accepted in science as he presented it twelve years ago.

In his first memoir he took stand against the dogmatic distinction established between the peripheral and central system as far as concerns their relations with multiple neuritis; the toxic agent may influence immediately both systems. According to his own observations, the anatomical lesions of the central system affect only the ganglionic cells; there may also be *focal* lesions of the gray substance, but he has not thus far met with lesions of the white substance.

It is difficult any longer to establish a clear separation between the nerves and the muscles, as the muscles may also be primarily affected with myositis.

The anatomical lesions of the nerves in cases of multiple neuritis present three varieties: 1. We may meet with abundant proliferation of cells and effusion into the nervous substance and into the sheath. 2. There may be a degeneration of the nerves with disappearance of the myeline. This is also an inflammatory form.

3. Lastly, according to his observations, acute ascending paralysis ought to be classed with multiple neuritis. He believes that the toxic agent first disturbs the functions; the material degenerations follow.

He does not know whether the neuritis may ever extend to the spinal cord. He does not know of any case in which a tabes or a myelitis has immediately followed a multiple neuritis. It is not impossible but that such cases may yet be witnessed.

The diagnosis may be difficult in alcoholic neuritis. It is probable that a great many cases of tabes reported as cured belong to the category of multiple neuritis.

E. P. H.

PHOSPHORUS POISONING.

(British Med. Jour., Dec. 19, 1891.) Elkins and Middlemass report the case of a lady, aged thirty-four, who suffered from mental depression, but was otherwise intelligent and coherent in conversation and had a good memory. After sucking the phosphorus ends of two boxes of matches, she died in about one hundred hours. Briefly, the mental symptoms were in order of appearance: Listlessness, drowsiness, restlessness, mental confusion, inability to understand what was said, inability to answer questions readily or correctly, inability to recognize friends, semi-consciousness, semi-delirium, delirium, fits of great restlessness, and violence, constant use of the word "yellow" when delirious, maniacal expression and behavior, coma.

Sensory symptoms: "Rheumatic pains," blindness (?)

Motor symptoms: Thick and drunken-like speech, pupils fixed and dilated, external strabismus of left eye. The pathological interest of the case lies in the changes in the nerve cells of the cortex. Sections of the cortex showed fatty particles in the walls of the larger capillaries and fatty granules in the larger nerve cells, most pronounced in the fourth layer. The authors state that the power of phosphorus to cause fatty degeneration in nerve cells has lately been denied, but that this case shows that the nervous system does not escape. The occurrence of fatty degenerations in so many tissues of the body, points to some fundamental alteration in the processes of metabolism which phosphorus has the power of bringing about, but what this really consists in we can as yet only conjecture. A. F.

CLINICAL.

ARTHROPATHY AND SYRINGOMYELIA.

Nissen, of Halle, at the twenty-first meeting of the Congress of German Surgeons, presented two interesting cases. The first was that of a man, twenty-seven years of age, who had been scoliotic since his thirteenth year. His disease dates from 1883. There then appeared in the region of the shoulder and the left arm, without any appreciable cause, an eruption of small vescicles and pustules, which, on healing, left a cicatricial contraction of the integument. At the same time the skin of the arm and left shoulder, as well as that of the corresponding side of the thorax, lost all sensibility and the scapulo-humeral articulation became the seat of a well characterized arthropathy. Last year, following a fall upon the shoulder, a large abscess of this region formed, in spite of any cutaneous lesion. After this was opened there remained a fistula which still remains there to-day, and from which there have issued various foreign bodies. It also secretes a large quantity of clear and viscid fluid. The skin of the limb is entirely insensitive to pain and heat. The integument of the arm and region of the left scapula has the appearance of a cicatrix in a large extent, as if it had been the seat of a burn. The shoulder joint is very mobile and swings in all directions. The head of the humerus has apparently disappeared entirely more or less. The synovial membrane is greatly thickened. Motion of the articulation is accompanied by cracking noises as in arthritis deformans.

The second case of this affection which came under the writer's observation, was that of a woman, forty-four years of age. Her affection dates back some twelve years. It began by a diminution and a subsequent disappearance of sensation in the left upper extremity. This insensibility persists till to-day, and one observes in her case, as in that of the former patient, all the signs of arthropathy, evidently of spinal origin, and located in the left scapulo-humeral joint. Besides this, the arm is the seat of a pronounced œdema. On the contrary, the arm skin does not present any cicatrical changes. Finally, in both the patients, the muscular force is considerable decreased, and in the left arm the muscles are quite atrophied.—*La Semaine Médicale*, No. 31, 1892. F. H. P.

A CASE OF SPASTIC HEMIATHETOSIS.

Alexander Koranyi (Centralbl. f. Nervenheilkunde und Psychiatrie) reports such a case, the history of which presents some points of interest. The patient, a young man twenty-two years of age, had, when in his fourth year, a sudden attack of right hemiplegia. Examination showed a remarkable difference in the degree of development in the two sides, especially in the length of the extremities, the left being much longer than the right. The athetoid movements were observed in the right upper and lower extremities. The attitude assumed by the members were of such force that it really constituted a spastic contraction. The corresponding reflexes were much increased. A peculiar condition existed in the course of the nerves of the right extremities. Pressure along the nerve trunks brought on a permanent contraction, which lasted as long as the pressure was kept up, resembling very much a cataleptic condition. Pressure on a single point not only brought on spastic contraction in the immediate muscle, but in others as well. Sometimes on releasing such pressure, it was possible, by voluntary effort, to bring the limb or members into normal position, a fact of which the patient frequently availed himself. The mechanical reaction was very marked. Galvanism had very much the same action on the nerves as had the pressure. The author was convinced that cases of spastic hemiathetosis were not infrequent after spastic infantile hemiplegia, although some cases might originate in a polyencephalitis. B. M.

HEMIATROPHY OF THE FACE.

(Skyme, Brit. Med. Journ., March 26, 1892.) The patient, a girl of seven years, has a good family and personal history, with the exception that her father is rheumatic and her mother is very nervous. When three years of age she got her head jammed in the bars of an iron gate, with an iron spike pressing under the chin, the head being rotated to the left and looking a little back. There was nothing noticeable resulting from the injury till six months afterward, when a depressed yellowish seam was apparent on the cheek below the left eye, the lower teeth began to fall out, the cheek to fall in, the atrophy implicating the skin, subcutaneous tissue, and muscles, and the upper and lower jaw of the right half of the face. There is no loss of hair or change in its color. Right half of tongue is atrophied and points to affected side when protruded. Taste and sensation are unaffected, no change in the electrical reaction of the muscles or their voluntary control, but on the application of the electrodes there is a vaso motor change in the shape of marked flushing. The child suffers from migraine; but whether or not the child was a sufferer from migraine before the receipt of the injury, the writer does not say, so it is not possible to properly interpret the relation between it and the hemiatrophy.

J. C.

HEREDITARY ATAXIA.

Dr. Loogaard, of Christiania, describes three cases of hereditary ataxia in three children of the same family, which came under his observation. The hereditary origin of the disease was unmistakable, without any cause being discoveral in either the parents or the relatives. In none of them was a deficient development to be found. The disease had appeared acutely in the 8–14th year, and without any apparent cause. It began with a light feverish symptom and very little pain, to rapidly pass over into the progressive chronic form. Ataxia is the most prominent symptom. Two of the patients pass the day in a chair, the other crawls about still, dragging himself around like a drunken man. Besides the ordinary spinal ataxia, with impossibility of reckoning the force and measure of movement, there is also an inclination to the cerebellar form, there being an absolute loss of equilibrium in the two oldest, the youngest walking in a zigzag manner. But besides these two peculiarities of movement, and the undoubted spastic gait, in at rest the tonus of the muscles is good and even somewhat increased. This is explained by implication of the pyramidal paths. The opposite holds true of tabes dorsalis. In one of the patients, a male, there is a slight inclination to club-foot. The muscular sense, on applying the usual tests, seemed to be better than would be expected. This is especially true in the dorsal position. In the standing position the balance is lost immediately on closing the eyes. As in tabes, the tendon reflex is absent, while the cutaneous reflex is present. It may even be exaggerated. The symptoms are especially pronounced in the upper extremeties. Speech is but slightly disturbed in one, and nystagmus is to be seen in none. Hence the condition in question is a slowly progressive process of upward direction. Two of the patient's relations are scoliotic. In contrast to the weaknessof the lower extremeties the gross strength of the muscles was striking, for the resistance offered was quite considerable. Only in one was a weakness of the ilio-psoas muscle to be discovered of both sides. This was also probably true to a less extent of the pelvic muscles, especially of the glutei. All the senses of the patients were good, only one of them presenting a slight limitation of the field of vision. If to these symptoms there be added that the affection ran a painless course, without atrophy and alteration of the electric reaction of the nerves and muscles, that no trophic changes were to be discovered, that the bladder and rectum functionated regularly, then the picture of hereditary ataxia was filled in its chief points. —*Norsk Magazin f. Lægevidenshaben*, No. 5, 1892. F. H. P.

SEQUEL TO A CASE OF MYXŒDEMA.

At a meeting of the Clinical Society of London, April 22, Sir Dyce Duckworth reported the sequel to a case of myxœdema, which he had presented to the Society two years previously. The patient was a female, and the earliest signs of myxœdema had been noticed some fifteen years before, and she had been under observation at intervals for about eleven years. The principal symptoms were progressive enfeeblement, and gradual onset of most of the well-known concomitants of the disease. Temperature was constantly sub-normal, intractable gastric catarrh and dyspepsia and a tendency to diarrhœa. The features became more and more bloated and the hands larger and more clumsy. The hair fell off and left a spare and very coarse covering on the scalp. Voice hoarse and guttural and the speech slow. Skin harsh and dry. Plantar reflex all right, knee-jerk first noticed to be absent in Feb., 1891. A little albumen constantly in the urine and the urea was several times found to be excreted at the rate of one per cent. Teeth fell out, rectum became much loaded, aggravated piles developed, and finally bronchitis set in, which was followed by death.

At the autopsy there was no noteworthy change in any of the organs. Arteries somewhat thickened, "distension" ulcers in cæcum and colon, kidneys slightly granular and small, submucous hæmorrhages in the bladder, uterus normal and ovaries hard and white. Some dilatation was found in the central canal of the cervical cord. The thyroid was small, white, and weighed two and one-half drachms. Duration of disease was probably fifteen years or longer. J. C.

CASE OF EXOPTHALMOS, FOLLOWING EPILEPSY.

Nius (Brain, 1892). A patient who had an attack of apparent *grand mal*, was taken two weeks afterward with giddiness, continual headache on left side of head, fixed and staring eyes, non-association of lid and eyeball in movement (Von Graefe's symptom) no enlargement of the thyroid gland. There was a fairly clear history of early syphilitic infection. Under bromides this patient did not progress favorably, but when potassium iodide was given in x gr. doses, three times daily, improvement was soon manifest.

The peculiar point of interest is the supervention of typical exopthalmos unaccompanied by any other of the usual signs of vaso-motor disturbance. J. C.

A CASE OF MYXŒDEMA SUCCESSFULLY TREATED BY MASSAGE AND INJECTION OF THE THYROID GLAND OF A SHEEP.

W. Beatty (Brit. Med. Journ., March 12, 1892). The patient, a married lady, aged 45, had been suffering from the symptoms of myxœdema, which had been steadily progressing for upward of four years. The symptoms and signs of myxœdema were so characteristic as to be unmistakable, and the diagnosis was corroborated by other physicians. An examination of the blood showed the percentage of hæmaglobin to be but 70 per cent. of the normal. She was first treated by massage for some weeks, and although this was attended by some beneficial results, still the improvement was not sufficient to lead to the hope that a prolonged course of massage would lead even to a partial cure; so it was decided to put her upon the extract of the thyroid gland of the sheep, which was prepared with proper antiseptic precautions, and the extract from two lobes was given in three doses, the time between the administration of each injection varying from four to ten days. In the language of the experimenter, the effect of the injections has been truly marvelous. A marked improvement in the patient's condition was noticed within a week, and at the time when the article was written, she was reported as practically cured. Face looks natural, the skin of the face is no longer thickened, eyelids are not swollen, lips and tongue are natural, speech is rapid and easy, the hair is growing in again, memory has returned, menstruation normal, etc. J. C.

ISOLATED PARALYSIS OF THE MUSCULO-CUTANEOS OF THE ARM, WITH REMARKS CONCERNING RUMPF'S TRAUMATIC REACTION OF THE MUSCLES.

F. Winscheid (Neurologisches Centralb., April 1, 1892). The author describes the case of a workman who noticed a sensation of numbness and sleepiness in the right thumb and a part of the front of the right forearm which came on on the evening of the day when he had received severe pressure from a heavy marble slab which he had carried on his right shoulder, and the edge of which had pressed deeply into the supra-clavicular fossa. At this time he also found difficulty in bending the elbow. When he consulted a physician, some two weeks later, he could flex the forearm, but when it was flexed the biceps remained flaccid and uncontracted. The difference in the circumference between the right and the left biceps was not marked. He complained of numbness and formication in the volar side of the thumb and the radial side of the forearm. The contact and pressure sensation in this region was fairly good, but there was almost complete analgesia. Reaction of degeneration was not to be obtained, but by the indirect faradization of the biceps. Rumpf's "traumatic, reaction," as described by him in the "Deutsch. Med. Wochen.," No. 9, 1890, was beautifully manifest. On cessation of the tetanizing current, a wave of short contractions, which were very intense, appeared in the muscle. Rumpf considers this phenomena to be almost a pathognomonic concomitant of traumatic neurosis; but Winscheid is not inclined to attach so much importance to it, believing it, however, to be of considerable corroborative value. After twelve weeks' treatment with electricity the arm was quite well; the right biceps once more felt tense and hard when the arm was bent, the disturbances of sensation were very markedly lessened, and Rumpf's reaction could only be brought out in the weakest sort of a way.

Rumpf observed this phenomena which is now associated with his name in many cases of traumatic neurosis, and explains it by considering that "there is a high grade of disturbance in the collective motor apparatus going from the spinal cord to the muscle," and considers that the spinal cord always participates in allowing its manifestation; but he also adds that "occasionally it is perhaps possible for a disturbance in the nerve alone, or in the muscle is sufficient, to cause the symptom without any genetic assistance from the cord."

This explanation, if such it can be called, is very obscure and we must look farther for some reason based on physiological facts. J. C.

ACROMEGALY

(Brit. Med. Journ., April 23, 1892.) At a meeting of the Hunterian Society, March 23, '92, the president, F. Gordon Brown, showed a well-marked case of acromegaly in a clergyman, aged 40. His father died at 68 of idiopathic anæmia, his mother was epileptic, and an uncle died of phthisis. He had rheumatic fever at the age of nine, and a mitral diastolic murmur was audible for some years after. For ten years past he had suffered from right frontal headache, intensified by overwork, with palpitation and shortness of breath for the past six months, as well as acid perspiration and thirst; no other pains. The hands were so large that they required No. 9 gloves, and the feet were also large. The face was oval, lengthened and slightly one-sided, the lower jaw thickened and prominent, especially at the symphisis. There was much prominence of the temporal ridges, zygoma, temporal and occipital protuberances and ridges; also the alæ, and the tip of the nose and the lobes of the ears were enlarged; the lower lip was thickened and enlarged. The tonsils were large and the pharyngeal linings in folds. The head was carried forward, the lower spinal curvature being exaggerated. The sternum, clavicle, and ribs were enlarged, and there were small molluscum fibrosum growths on the chest and arms. The arms were battledore shaped and remarkably enlarged, especially the parts supplied by the median nerve. Pulse 110 to 130; urine normal. The patient was improving under antipyrin and arsenic. J. C.

THE CEREBRAL ATROPHIES OF CHILDHOOD.

M. A. Starr, M.D. (Medical Record, January 23, 1892). Hemiplegia, sensory defects, and imbecility occurring with or without epilepsy in children, are chronic diseases, incurable by medical treatment. Any means which may be legitimately used to save the individual from a life of invalidism is to be employed. The pathological conditions producing these symptoms may be either gross defects and atrophies of the brain, or an arrest of development in the cerebral cells, without any change apparent to the naked eye. It is impossible at present to determine absolutely the pathological condition present in any given case, without an exploratory operation. Such operations are not without danger, but if caution is used in opening the dura, and if the operation is made as short as possible, the dangers are avoided. When manifest atrophies are present, the operation will not produce any result. When there is arrested development of cerebral tissue it may prove of service. If cysts, clots, or tumors are found and removed, the chance of recovery is increased. Where the skull is markedly microcephalic from early union of the sutures, the increased space given the brain by operation appears to stimulate its growth. Epileptic attacks are commonly reduced in frequency and modified in character by craniotomy. When the opening in the skull remains covered only by the soft tissues, it appears to act as a safety-valve, allowing changes in the intra-cranial contents to occur without causing brain pressure. While hemiplegia, aphasia, athetosis, and sensory defects have been relieved by operation, it is still impossible to predict to what extent imbecility may be relieved. Reports of cases should be made in full, and not within six months of the time of operation, as conclusions cannot be reliable unless reached from long observation. A. F.

PUERPERAL PSYCHOSES.

Prof. Olshausen calls attention to the relation of psychoses to grave infectious disease of the puerperium. Their relation has been but little understood and studied. According to the writer's experience it is chiefly cases of puerperal pyæmia, with ulcerative endocarditis, that are followed by mental diseases. Out of 200 cases of eclampsia the writer observed 11 cases of subsequent psychosis; to these he adds 315 cases from the literature which were succeeded by 20 cases of diseases of the mind, hence with a relation of six per cent. Post-eclamptic mental diseases are characterized by their early appearance, the persistence of hallucinations, their rapid and a febrile coma and, finally, their tendency toward recovery.—*Zeitschr. f. Geburtshülfe und Gynäkol.*, xxi., 2.

(An important, yet quite unknown, work on this subject was published in Denmark, in 1888. Dr. Th. B. Hansen. "Our Forholdet mellem puerperal shirdssygdom of puerperal Infection—The relation between puerperal psychoses and puerperal infection.)—*Translator*. J. C.

Society Reports.

AMERICAN NEUROLOGICAL ASSOCIATION.

Eighteenth Annual Meeting, held in New York, June 22, 23 and 24, 1892.

[CONTINUED.]

The President, DR. C. L. DANA, in the chair; Dr. G. M. HAMMOND, Secretary.

A CASE OF HUNTINGTON'S CHOREA, ALSO ONE OF CONGENITAL CHOREA—THE FIRST ON RECORD.

Dr. L. C. GRAY, of New York, presented a man suffering from Huntington's chorea. The disease had manifested itself in the same family for many generations. The movements had appeared in this case when the patient had reached the age of forty-five years. The man belonged to some branch of the Stamford County family. The speaker did not consider the swaying and dancing movements in this case typically those of ordinary chorea of the Sydenham type.

Dr. GRAY then showed a case in a child which he considered was one of congenital Huntington's chorea. There had been no similar trouble in other members of the child's family, and the general history was negative. The choreic movements had been noticed immediately after birth. The infant was a seven-months' child. This disease showed itself generally between the ages of thirty and fifty, and this was the youngest case known to the speaker upon record.

DISCUSSION.

Dr. WHARTON SINKLER said that Dr. S. C. Stephens, of Blackville, S. C., had reported, in a communication read before the South Carolina Medical Association, in April, 1892, several cases of hereditary chorea.

These cases all belonged to one family in which there had been this form of chorea for several generations.

Among the cases which he reported were two brothers, one eleven and the other twelve years of age. In both cases it was stated that the disease developed under one year of age.

Dr. Stephens does not state the exact period at which the choreic movements were first observed, but it is not improbable that they had existed from birth, as it is very hard to decide in an infant at what time the usual incoordinate movements become pathological. Dr. Sinkler remarked that the case of the child presented by Dr. Gray, was certainly different from ordinary chorea, that it presented the features of the so-called spinal chorea, and was, no doubt, a case of hereditary chorea.

Dr. J. H. LLOYD thought that the so-called Huntington's chorea, which was clinically very similar to ordinary chorea, was dependent upon a different pathology. He had observed in the Philadelphia Hospital a woman of eighty with senile chorea. There was always an associated mental failure in those forms of adult chorea.

Dr. COLLINS reported having observed the case of a child, eleven months old, in whom the movements, which had dated from birth, were more characteristic than in Dr. Gray's case, and which would fulfill the conditions implied in the name "congenital hereditary chorea," as the patient's mother had previously suffered from chorea. In the patient before them the lesion was probably situated in the cortical motorial areas in the shape of a congenital lack of development, and the too apparent lack of mental development could be taken as corroborative evidence of this statement.

The PRESIDENT presented a case of hereditary chorea in a man, a native of Scotland, in whose family the disease had appeared for four or five generations. The speaker was presenting this case to show the effect of trephining. The temporary relief afforded by the operation in general paresis had suggested the probability of some such result in this case.

PHTHISIS IN ITS RELATION TO INSANITY.

Dr. THOMAS J. MAYS, of Philadelphia, read a paper with this title. All observers, so far as the speaker was aware, were agreed in the opinion that the insanity was a precursor of the phthisical affection among the insane. This explained why, as Clouston remarked, insanity was not more frequently found in hospitals for pulmonary consumption. Not only was phthisis more common among the insane than it was among the general population, but facts showed that this disease had a predilection for certain forms of insanity. Thus, it was more likely to occur in the depressed than in the exalted types of insanity. Clouston says that this was especially true of melancholia when combined with the monomania of suspicion, and that sooner or later nearly all these cases die of pulmonary phthisis. The speaker's own observation led him to believe that general paralysis or paretic dementia was not infrequently associated with phthisis. The most superficial examination of mortality statistics made it clear that the human constitution was more vulnerable to phthisis at certain periods of life than others, although it was true that those who inherit the disease died three years earlier than those who acquired it. This was true whether the disease affected the lungs, the brain, the bones, or any other portion of the body. As to the influence of heredity in the causation of pulmonary consumption and insanity, it had been recognized since the days of Moreau that the neurotic tendency bred pulmonary consumption in the offspring. Although asthma was a well-recognized disease, its life history had not been investigated with the thoroughness that its importance demanded. This was particularly true with regard to the tendency through which it produced death.

The speaker thought that the facts tended to demonstrate that asthma was closely associated with consumption on the one hand, and on the other that asthma was closely related to insanity. Of all the nervous diseases none was more frequently associated with pulmonary consumption than idiocy. Indeed, this intimacy was so strongly maintained that one was tempted to be skeptical until the statistics on the subject were fully examined. An interpretation of such data was that pulmonary phthisis and insanity certainly belonged to the same family group of diseases. Notwithstanding the great advance in the modern study of the neuroses the pathologic relationship between the lungs and their nerve supply had been practically ignored. The lungs were innervated by the largest and most important nerves in the body; yet, strange to say, nearly all of the diseases incidental to these organs were at present attributed to the influence of irritants and excitants introduced from without, and the possibility that the fault might reside in this nerve did not even receive serious consideration. The foregoing facts, figures, and inductions establish, the speaker thought, the truth of the proposition that the link that bound pulmonary phthisis to insanity and other neuroses was a disease of the vagi. The connection furnished a key to the problem why pulmonary phthisis, a developmental disease, should occur in organs that underwent no development at the time of the greatest prevalence of the disease. It also showed why asthma should naturally be transformed into pulmonary phthisis; it furnished the reason this disease was at least three times as common among the insane as among the sane; and why it was about eight to ten times as prevalent among families burdened with either idiocy or hysteria in some of their offspring, as in those not so burdened. Indeed, this was what the theory predicted and demanded. It did even more than this. It explained why idiots died of pulmonary phthisis ten years earlier than healthy persons. This was accounted for by the fact that a depraved brain and nervous system, such as obtained among this class of unfortunates, offered less resistance to the disease than a healthy brain and nervous system. It offered at least a partial solution to the question why pulmonary phthisis was more prone to show itself among the insane, than was insanity to show itself among the phthisical. Insanity was an affection of the highest nerve centres, and pulmonary phthisis, if this was granted, was an affection of the respiratory, and hence of the lower centres. Finally, that in genesis and in nature, pulmonary phthisis was so closely related to insanity and to other neuroses, that it might be regarded as one of the branches of the family tree to which they belonged.

DISCUSSION.

Dr. MILLS, while recognizing the value and extent of the ground covered in Dr. Mays' paper, thought its conclusion only went to show the failure of such statistical studies.

Dr. LLOYD could not follow the author of the paper in his position. The whole argument was undermined by the fact that the resisting power of a patient was rendered below par by heredity, enfeeblement of constitution, or improper environment.

Dr. PARSONS had found the ratio of phthisis to insanity quite large.

Dr. KELLOG did not believe that there was any special relation between insanity and phthisis, or that phthisical people were any more apt to become insane than anybody else.

Dr. TOMLINSON coincided with the views of Dr. Lloyd. Just as these patients became unstable in varying degrees; so they were unable to cope with their surroundings, and if sufficiently strong influence was brought to bear, they would break down in the direction of their greatest weakness. The result might be phthisis or insanity.

Dr. MAYS closed the discussion in a few remarks defending his original position.

A CASE OF AKINESIA ALGERA.

Dr. J. J. PUTNAM, of Boston, described the patients suffering with this condition as experiencing severe pain during or after use of the muscles. Patients were all neurasthenic. He had a case, many years ago, for which he had always desired to find some category, and to report when he found such category. He had supposed the symptoms were an exaggeration of those common to nervous patients. The patient referred to was, when seen by the speaker, a middle aged man, and his trouble had existed since childhood, gradually increasing in severity. He had belonged to a family of nervous invalids. The symptom to which the speaker wished to call attention, was excessive pain immediately following the use of the muscles. The man could not walk one-third of a mile without pain coming on upon cessation of exertion. This result was invariable. The pain was situated mainly in the legs, but if the arms were used he would suffer pain in them. There were no sign of any atrophic changes, the man was well formed, had a delicate skin, and there was no other symptom present. The pain was diffused throughout the muscles of the thigh and below the knee. There was no tenderness.

CEPHALIC TETANUS.

Dr. J. J. **Putnam** also described a condition under this title, and which he said was rarely observed in this country. The patient, after having five teeth filled, had been seized with stiffness of one side of the face and neck. This was followed by spasms so severe that the teeth were ground together. The spasm was continuous. The temperature was 101° F. After some six or eight weeks the symptoms had passed away; but, as they abated, the opposite side had become involved, but, in a less degree. A surgeon who had seen the case thought it was not tenanus; but there was really no reason why the parasite might not have been introduced during the filling of the teeth.

A CASE OF BRAIN TUMOR.

Dr. M. A. **Starr** presented as a specimen a brain tumor, which had within the hour been removed by Dr. McBurney.

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OCTBER, 1892.

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Note Relative to the Buffalo Lithia Water.

WILLIAM A. HAMMOND, M.D., Washington, D. C.

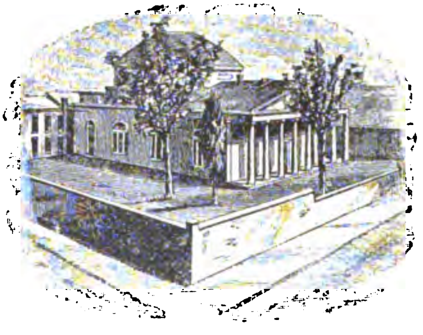
Surgeon-General U. S. Army (retired), formerly Professor of Diseases of the Mind and Nervous System in the University of New York, etc.

There is a point in relation to the therapeutical efficacy of the Buffalo Lithia Water which has not as yet, I think, received sufficient attention. It is well known that many cases of diseases of the nervous system are complicated with lithæmia, and that unless this condition is removed a cure is very often retarded and not infrequently entirely prevented. It is quite commonly the case that in cerebral congestion producing insomnia, nervous prostration resulting from over-mental work or much emotional disturbance, and in epilepsy (to say nothing of many cases of insanity) an excess of uric acid in the blood is often observed. This state appears to be altogether independent of the character of the food, for no matter how careful the physician may be in regard to the diet of his patient the lithæmic condition continues. I have tried to overcome this persistence by the use of phosphate of ammonia and other so-called solvents for uric acid, but without notable effect.

Several years ago, however, I began to treat such cases with Buffalo Lithia Water, with a result that was as astonishing to me as it was beneficial to the patient, so that now in all cases of nervous diseases under my charge, in which there is an excess of uric acid in the blood, I use the Buffalo Lithia Water in large quantities. By this I mean that I do not have the patient drink merely a tumbler or two in the course of the day, but that I flood him, so to speak, with the water, making him drink a gallon or even more, in the twenty-four hours. By this course the urine after a few days ceases to deposit uric acid crystals on standing, the morbid irritability of the patient disappears, the tongue becomes clean, the wandering pains in the head are abolished, and the system is rendered much more amenable to the special treatment which may be necessary for the cure of the disease from which the patient suffers.

I have tried carbonate of lithia dissolved in water in various proportions, but it certainly does not, in cases to which I refer, have the same effect as Buffalo Lithia Water.

WASHINGTON, D. C., January 25, 1892.



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THE
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Original Articles.

ATROPHY OF THE CEREBELLUM IN A CAT.

By WILLIAM O. KROHN, Ph.D.

THE study, which supplies the material for this article, was made in the Neurological Laboratory of Clark University, and under the direction of Professor H. H. Donaldson. The specimen which forms the basis of this study was kindly furnished by Dr. B. R. Benner, of Lowell, Mass., and to him we are indebted for a description of the cat before it was brought to the university laboratory.

Dr. Benner informs us that the cat suddenly became paralyzed when three months old. He was observed coming out of the stable one morning apparently as well as ever, but a very short time after it was noticed that his hind legs had become almost entirely helpless. For several days he was disinclined to eat, and all attempts at locomotion were accompanied by spasmodic jerkings. In the act of walking, the hinder parts seemed to get along considerably faster than the fore limbs, and faster than he desired, giving a ludicrous effect. After a time he recovered his appetite, became cheerful and lively, continued to improve, and, with the exception of the permanent disability to the limbs, he seemed to be as well as ever, for his development was not retarded, as he grew to normal size. During the five months previous to his being brought to the laboratory there was no change manifested.

There were but two kittens born in the litter, this cat and a sister. The latter is living and is bright and healthy. In disposition there was a slight difference, in that the subject was more shy and timid than the healthy sister, running away more quickly on the approach of strangers. Sexually, he was incompetent, his efforts in this direction being blundering and abortive. There is no history of any injury whatever; yet the trouble manifested itself suddenly, and was not progressive. Both sides were affected and were so from the very first.

When brought to the laboratory, the cat was eleven months old. Here it was observed that he was timid and shy; well nourished; could walk and trot; but his gait was zigzag and staggering, as his hind legs spread somewhat laterally in locomotion; all four legs appeared somewhat ataxic, but hind legs more so; inco-ordination of the limbs, especially of the hind legs, which were raised very high and placed so far forward that they overstepped the forelegs in walking; peculiar movements most marked when going slowly; could jump off a stool, also raise himself on his hind legs, but manifested a disinclination toward doing so; volitional movements of the head and neck spasmodic and jerky; he trembled a great deal all the time, but especially after moving about; his sitting posture normal; shook a good deal when turning around to look out of the window; eyes also normal; tail rigid; hind legs seemed a trifle thin; miowed and purred.

The results of the autopsy were negative save in the case of the cerebellum, which was slightly smaller and more resistant to the knife than the normal, and seemed shrunken, the cortex appearing rather thin; fore-brain in normal condition; appeared well nourished; viscera in good condition; bladder full and distended; spinal cord normal; some fat in canal; nothing to be seen in sciatic nerves. The cerebellum and spinal cord, as well as one lumbar and one dorsal spinal ganglion, were preserved for further examination and study.

These portions were first placed in a 2½ per cent. solution of bichromate of potash, plus ⅓ its volume of 95 per cent. of alcohol, for the purpose of hardening, where they were kept for six weeks, when they were washed in water for thirty-six hours, put in 95 per cent. alcohol for one day, and then kept for a time in 80 per cent. alcohol. The cerebellum was cut in halves by a section passing through the vermis. Each half was considered as composed of three divisions which resulted from dividing each half by two more sections in the same plane and at equal intervals from one another. Each division, therefore, represented a slice of the cerebellum about four millimeters in thickness. The slice nearest the middle line was divided into a dorso-cephalic portion, designated as C, and a ventro-caudal portion, A. The second slice of each half was also divided into two portions, a dorso-cephalic, D, and a ventro-caudal, B. The remaining portion, E, was undivided, and represented the lateral third of the hemisphere. These portions were imbedded in celloidin in the usual manner, and then cut with the microtome into sections varying from five to six one-hundreths of a millimeter in thickness. The method of staining was as follows: The three sections were first washed in water, and then placed in picro-fuchsin (Van Gieson), where they were allowed to remain two minutes. The picro-fuchsin was made from a saturated solution of picric acid, which was colored a garnet red by adding an aqueous solution of acid fuchsin. On being taken from the picro-fuchsin, the section was washed in 95 per cent. alcohol, and then placed in Delafield's hæmatoxylin for one minute. It was then washed in water, after which it was placed in a solution of lithium carbonate for about a minute. It was again washed in 95 per cent. alcohol, and then allowed to lie in oil (origani cretici) for a time, when it was mounted in the usual manner.

For the purpose of comparison, four normal cerebellums were taken to serve as controls. Controls I., II., and III. indicate the cerebellums of three cats not related, three months old, selected because the cat whose cerebellum forms the basis our study, was three months old when the ataxic symptoms were first manifested, and it was therefore desirable to secure specimens of the cortex in animals of that age for the initial comparison. Control IV. represents the cerebellum of a six months cat. The cerebellum of each of these four controls was cut as described above in the case of the ataxia, except that the slice nearest the middle line was, in the case of the four controls, cut into three divisions, A, C, and F, instead of two as in the ataxic. That portion of the control indicated by F, is included in A of the ataxic.

As a preparation for measurement, outlines were drawn of each of the sections of all the controls, as well as the ataxic specimen. In each section, four regions, not contiguous, were indicated in the drawing, and these were then measured in the mounted specimen; the measuring being for the purpose of determining the thickness of the molecular layer, and the order or method of measurement, in determining the thickness of this molecular layer was this: First, at the summit of the folium; second, at one side of the sulcus (side A) midway between the summit and base; third, at a corresponding point on the opposite side of the sulcus (side B), and lastly, at the base of the sulcus between two folii. Thus, to make a *résumé*, we have four normal specimens, which, for the purpose of comparison, serve as controls, and one ataxic specimen. Each control is cut into twelve divisions (six divisions in each half), and the ataxic specimen is cut into ten. Four measurements (summit, two sides, and base) are made at the four different localities in each section, making a total of 928 measurements. The results of these measurements, which, as has been stated, were made with a view to determine the thickness of the molecular layer in the four controls, as well as in the ataxic specimen, are comprehended in the following table: The measurements were made with the Zeiss apochromatic objective 16, and compensating eye-piece 6. These measurements are therefore expressed in thousandths of a millimeter. The limits of measurement were the bases of the Purkinje cells and the inner surface of the pia.

TABLE I.—SHOWING THICKNESS OF MOLECULAR LAYER AT FOUR LOCALITIES IN EACH PORTION OF THE FOUR CONTROLS AND THE ATAXIC SPECIMEN. THE UNIT OF MEASURE IS THE MILLIMETER.

		RIGHT HALF.					LEFT HALF.					
	PORTION.	SUMMIT.	SIDE A.	SIDE B.	BASE.	AVER.	SUMMIT.	SIDE A.	SIDE B.	BASE.	AVER.	TOTAL AVER.
	A	.224	.316	.308	.280	.282	.316	.276	.292	.316	**.300**	.291
CONTROL	B	.264	.268	.288	.312	.283	.288	.292	.296	.324	**.300**	.291
	C	.264	.292	.308	.288	**.288**	.232	.292	.312	.300	.284	.286
I.	D	.264	.248	.292	.268	.268	.240	.316	.288	.324	**.292**	.280
	E	.272	.312	.304	.332	.305	.268	.324	.380	.357	**.332**	.318
3 MOS.	F	.204	.236	.248	.296	.246	.248	.288	.280	.288	**.276**	.261
	Aver.	.248	.278	.291	.296	.278	.265	.298	.308	.318	**.297**	.287
	A	.236	.308	.280	.304	.282	.320	.268	.284	.300	**.293**	.287
CONTROL	B	.272	.340	.292	.316	**.305**	.288	.288	.312	.300	.297	.301
	C	.224	.284	.256	.308	.268	.272	.260	.272	.312	**.279**	.273
II.	D	.256	.288	.280	.300	.281	.316	.312	.280	.312	**.305**	.293
	E	.264	.264	.288	.315	.282	.272	.316	.324	.336	**.312**	.297
3 MOS.	F	.232	.256	.276	.260	.256	.260	.276	.288	.304	**.282**	.269
	Aver.	.247	.290	.278	.300	.279	.288	.286	.293	.310	**.294**	.286
	A	.256	.308	.304	.272	.285	.324	.304	.288	.312	**.307**	.296
CONTROL	B	.296	.304	.296	.348	**.336**	.264	.272	.248	.308	.273	.304
	C	.232	.256	.256	.268	.253	.264	.308	.288	.272	**.283**	.268
III.	D	.236	.252	.280	.280	.262	.288	.280	.324	.348	**.310**	.286
	E	.244	.264	.280	.320	.277	.280	.300	.340	.320	**.310**	.293
3 MOS.	F	.252	.248	.252	.280	.258	.268	.304	.312	.304	**.297**	.277
	Aver.	.252	.272	.278	.294	.278	.281	.294	.300	.310	**.296**	.287
Total	Aver.	.249	.280	.282	.296	.278	.278	.292	.300	.312	**.295**	.286
CONTROL	A	.304	.364	.356	.348	**.343**	.348	.352	.324	.304	.332	.337
	B	.328	.284	.276	.324	.303	.352	.344	.340	.356	**.348**	.325
IV.	C	.336	.324	.284	.356	**.325**	.308	.336	.304	.304	.313	.319
	D	.304	.300	.304	.304	.303	.340	.388	.360	.396	**.371**	.337
6 MOS.	E	.328	.320	.308	.364	.330	.405	.363	.373	.400	**.385**	.357
	F	.320	.316	.304	.348	.322	.324	.308	.332	.332	**.324**	.323
	Aver.	.320	.318	.305	.340	.321	.346	.348	.338	.348	**.345**	.333
	A	.164	.172	.216	.204	**.189**	.144	.168	.168	.188	.167	.178
ATAXIC.	B	.172	.176	.164	.180	.173	.180	.184	.200	.220	**.196**	.184
	C	.144	.180	.168	.212	**.176**	.144	.168	.156	.208	.169	.172
11 MOS.	D	.164	.168	.176	.270	**.194**	.148	.204	.184	.188	.181	.187
	E	.368	.340	.328	.368	**.351**	.272	.232	.244	.288	.259	.305
	Aver.	.202	.207	.210	.246	**.180**	.177	.191	.190	.218	.162	.171

These measurements show that the atrophy involved all parts of the affected cerebellum except E right. The nature of the disturbances found in these portions are now to be described with more or less detail.

I.—PIA AND BLOOD-VESSELS.

In the abnormal portions of the ataxic specimen the blood globules do not show so distinctly as in the normal portions of the same specimen, or in the controls. In these same abnormal portions, the pia is somewhat thinner and less regular in its thickness than in the specimens which served as controls. This is especially true with reference to the folds of the pia in the sulci between the folii where, as a rule, the pia is less compact. The walls of the blood-vessels are less clearly defined than in the normal, and contain fewer neuclei, which are abundant in the blood-vessels of the less affected portions.

II.—HISTOLOGY OF THE MOLECULAR LAYER.

The small thread-like fibres (radial fibres) in this layer, most of which run at right angles to the surface, show much more clearly in the ataxic than in the normal, giving to this layer (in the ataxic) a marked striate appearance. Indeed, in the normal specimen, the course of the connective-tissue fibres cannot be traced, while in the diseased portions of the ataxic specimen, one can follow them as far as the Purkinje cell layer, to which their course is direct. They run parallel to each other and without dividing. At their peripheral ending, just at the pia, a few of these fibres branch, but the majority end with pyramidal bases, the broad ends of which abut against the inner surface of the pia. The Purkinje cell processes, which are much thicker than the other fibres, branch and spread, and cannot be traced to the periphery, but lose themselves before reaching the pia. These processes always divide at a short distance from the Purkinje cells, and this division occurs at a greater distance from the cell at the summit of the folii than in the region at the base of the valleys. Throughout the entire molecular layer are distributed small cells which show their nuclei very clearly. This distribution is without any order, except that the cells are more abundant in the regions contiguous to the Purkinje cell processes and near the pia at the periphery. In the normal portion of the ataxic specimen and in each of the controls, the nuclei of these cells are surrounded by a well-marked cell body, which disappears entirely in the diseased portions, leaving nothing but the bare nuclei remaining. It should also be mentioned that some of these small cells send off very fine processes, which are visible only in the normal. The processes of the Purkinje cells show much more plainly, are longer, and have more branches in the normal than in the ataxic specimen. In the diseased portions, no Purkinje cell processes are to be seen. In no case have the processes from one Purkinje cell been found to come in contact or unite with those of another Purkinje cell; they always remain distinct, even in case of the very finest processes. In the vicinity of the Purkinje cells are a few fibres that run parallel to the surface and are visible only in the ataxic specimen.

III.—THE PURKINJE CELLS.

In the abnormal portions of the ataxic specimen, some of the Purkinje cells have disappeared entirely, leaving open and empty places, but for the most part the cells are only considerably shrunken. It seems that these Purkinje cells are less affected, *i. e.*, they preserve their shape, size, and general character better in the portion of the folii near the base of the sulci than at the summits of the folii. In the ataxic, the Purkinje cells in the affected portion have lost their large round nuclei, which, with their nucleoli, show so plainly in the normal. In the normal these Purkinje cells are very similar in size and shape, while in the ataxic, there is no regularity in this respect. In all the specimens which served as controls, these Purkinje cells were found to be much more numerous at the summits of the cerebellum, where they are packed closely together, than at the base of the valleys, where they stand quite a distance apart. Small fibres extending toward the granular layer can be seen at their basal end, but cannot be followed save for a very short distance. One of the most marked differences between the tissue of the normal and ataxic specimens is that which comes out in an examination of the Purkinje cells with reference to their size, shape, and general appearance. In the normal portions of the ataxic specimen, where these cells are more like the normal, the radial connective-tissue fibres are less evident. In the degeneration of the Purkinje cells, the processes more remote from the cells are the first to be affected, then the degeneration approaches the cell itself. It begins to shrink and loses its nucleus with its shining nucleolus, as well as its elliptical shape, becoming more and more round as it becomes smaller, until it disappears altogether. All stages of degeneration were observed in the Purkinje cells of the ataxic specimen.

IV.—THE GRANULAR LAYER.

In the normal specimens the granules in the region adjacent to the Purkinje cells are larger than the others, but no structural differences are displayed. The layer of granules is always thickest at the summits of the folii, and thinnest at the bottom. There is no regular arrangement in their distribution, save that where thickest they are found in small groups. We were unable to detect any difference in the appearance of the granular layer of the ataxic specimen as compared with that of the normal, save that in the affected portions of the ataxic, the line of demarcation between this layer and the Purkinje cells is less clearly drawn, and that also in the ataxic, the granules near the Purkinje cells are oftentimes more angular in shape and, on the whole, less closely packed and less numerous in the ataxic than in the normal. The medullary fibres from the central white portion form a network throughout the whole of the granular layer.

V.—THE WHITE MEDULLARY SUBSTANCE.

There is no difference discernible between the ataxic and normal specimens with reference to the appearance of this white medullary substance.

VI.—CONDITION OF THE SPINAL CORD.

A few scattered degenerated fibres were found in the column of Burdach, especially in the cervical and lumbar regions, but these are restricted and apparently local, since they could not be followed in the thoracic cord.

There was no trace found of any inflammatory process, or any sort of hemorrhage, and the symptoms manifested by the cat were such that, when taken with the thinning and arrested development of the cortex, we are led to describe the disease as a case of simple atrophy, which, of course, is not an explanation. As already intimated, certain degenerations were found in the spinal cord, but in the main study these were not followed out in detail.

GENERAL CONCLUSIONS.

We wish to call attention to the following:

(1) The general fact, so well sustained by the measurements recorded in the table given above, that in the normal specimens the molecular layer of the left hemisphere of the cerebellum is thicker than that of the right hemisphere, is brought out by the heavier figures. By consulting the table it is seen that in only five instances was there a preponderating thickness of this layer on the right half, and since in the characteristic cat's cerebellum, the vermis is turned rather to the right of the middle line, these exceptions might readily be accounted for.

(2) A marked growth in the thickness of the molecular layer the six months' cat as over aganinst the one three months old, is also indicated in the above table. Thus the average thickness of the entire molecular layer in the case of the three months' cat is about .286 of a

millimeter, while that of the six months' cat is .333 of a millimeter, an increase of 16¼ per cent.

(3) The relative thickness of the molecular layer at the summits, sides, and bases of the same folium. By consulting the table it is found that the average thickness of the summits in each of the four controls is .248, .247, .252, and .320 respectively, on the right hemisphere, and on the left, .265, .288, .281, and .346, respectively, while the bases taken in the same order exhibit these figures: .296, .300, .294, .340, for the right, and .318, .310, .310, and 348 for the left hemisphere, an increase of 12 per cent. in favor of the regions at the bottom of the fissures. This is just the reverse of the relation that obtains in the cerebrum,

(4) It will be remembered that the ataxic was three months old when it began to manifest symptoms of disease. But by reference to the table, it is seen that the molecular layer is much thinner in the case of the ataxic cat than in the normal three months' cat. We append a table showing this in per cents.

TABLE II.—Showing in per cents. the average thickness of the molecular layer in the diseased cat, accompanied with the average thickness of the same layer in the normal cat three months of age.

REGION.	RIGHT.	LEFT.	TOTAL.
A	55.1%	50.3%	52.8%
B	57.1%	56.3%	56.6%
C	54.2%	54.0%	54.0%
D	64.0%	44.8%	55.2%
E	106.4%	67.3%	85.4%

"Arrested development" alone cannot account for this. It is only explained by an active atrophy.

(5) The distribution of the Purkinje cells. It is an interesting fact in every normal specimen examined, the

Purkinje cells were closely packed together at the summits of the convolutions, where they were found to be very numerous, while at the sides, as we passed toward the base of the sulcus, the distance between these cells was found to increase, and at the very bottom they stood quite far apart. This makes a direct proportion between the thickness of the granular layer and the number of Purkinje cells, as has been already suggested by others.

(6) Certain histological characteristics. (*a*) Some sort of relation exists between the peripheral processes of the Purkinje cells and the small cells of the molecular layer, but this is only of a general nature. (*b*) In the degeneration of the Purkinje cells, the processes more remote from the cells are the first to be attacked, then this degeneration approaches nearer and nearer to the cell-body, which begins to shrink, losing its nucleus, becoming smaller and smaller, until it drops our altogether leaving an empty cavity.

It was with the hope of contributing something to comparative pathology that these observation were made.

WORCESTER, MASS., June 28, 1892.

HYSTERIC MUTISM CURED BY FARADISATION.

At a recent meeting of the "Société Médicale des Hôpitaux," Troisier spoke of a case he had presented at a previous meeting of a patient who was suffering from hysterical mutism, but who was now completely cured, after having had five electrical séances with the employment of faradism. The affection had come on abruptly after the patient had suffered some days from dysphasia, and a sort of tardiness in speech, but no real stammering, and it disappeared with equal abruptness after the last application of electricity.

J. C.

THE TOXIC ORIGIN OF INSANITY.[1]

By THEO. H. KELLOGG, M.D.,
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TWENTY-FIVE years ago comparatively few cases of insanity were recognized to be of toxic origin. Modern research and clinical observation on the part of many specialists in nervous and mental diseases have established the fact that a considerable percentage of all mental disorders can be said to have a toxic etiology.

Whenever a poison enters the human system, and through its presence, directly or indirectly, causes prolonged derangement of the mental functions, it is but reasonable to call the insanity toxic, and to regard the deleterious substance as the exciting cause of the disease. It is true of this exciting cause, as of all others, that it will act only in cases having a native instability of nervous centres.

The toxic agent may be vegetable, animal or mineral. It may be solid, liquid or gaseous. It may be generated as an organic virus in the bodies of others, or it may originate through metabolic tissue changes in the patient himself, as in the auto-intoxications.

The poisonous substance may gain access to the system through the alimentary canal by the respiratory tracts, or through the cutaneous surface, and it may act by direct affinity on the cerebro-spinal centres, or the sympathetic nervous system, or through pathological changes which it produces in the blood, or in the internal organs.

The whole subject demands certain subdivisions in order that it may be studied to advantage, and the following arrangement of the toxic origin of insanities is merely offered as an aid to their systematic consideration.

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[1] Read at the meeting of the American Neurological Association, at New York, June 22, 23 and 24, 1892.

TABLE OF THE TOXIC ORIGIN OF INSANITY.

I. *From mineral poisons and certain drugs.*—1. lead; 2. mercury; 3. arsenic; 4. chloral; 5. bromide of potassium; 6. iodoform; 7. paraldehyde.

II. *From vegetable poisons.*—1. opium; 2. belladonna; 3. cannabis indica; 4. hyoscyamus; 5. stramonium; 6. tobacco; 7. cocaine; 8. conium; 9. erythroxylon coca; 10. astragalus hornii; 11. secale cornutum.

III. *From intoxicants and noxious gases.*—1. alcohol; 2. ether; 3. chloroform; 4. carbonic oxide; 5. sulphurous acid gas.

IV. *From eruptive fevers, diathetic states, and other diseases.*—1. typhoid fever; 2. small-pox; 3, scarlet fever; 4. intermittent fever; 5. rheumatism; 6. gout; 7. lithæmia; 8. puerperal state; 9. la grippe; 10. cancer; 11. syphilis; 12. tuberculosis.

V. *From auto-intoxications.*

This grouping is by no means exhaustive, though it gives a sufficient idea of the toxic sources of mental disorders.

It is by no means claimed that all of the toxic agents named give rise to distinct forms of mental disease, though a physician of wide experience would in many instances, by the clinical symptoms alone, differentiate between certain of the toxic insanities.

Time will not permit a description of the many ways in which the poisonous substances actually find their way into the system. It will suffice to simply mention adulterated food, impure water supply, and the numberless exposures to these noxious agents through special occupations.

It is of interest to note that the action of these agents is often most persistent, and continues long after the exposure, and that the variation in effects of the same agents in different individuals is very great. This individual idiosyncrasy is well illustrated in the instance of alcohol, which by some is borne in enormous quantities, while in others the smallest amount will derange mental action.

Most of the toxic agents mentioned may start a long train of somatic or psychic disturbances, and either set of symptoms may predominate or alternate with the other.

It would exceed the limits of this article to describe the characteristics of the toxic insanities, but some passing remarks will be made as to the action of the morbific agents in the order in which they are above grouped.

Attention is first invited to the group of mineral poisons.

In recent and severe cases of lead poisoning the mental derangement is apt to take the form of mania, with rapidly changing hallucinations, but in the more usual and chronic cases of plumbism there is a decided tendency to dementia, which in consideration of the motor symptoms, and convulsive attacks may somewhat resemble general paresis. The prognosis in the latter cases is unfavorable, not only as to mental recovery, but also as to life.

Mercury, which is a less frequent cause, is more apt to give rise to acute than to chronic forms of mental disorder, and the prognosis is correspondingly more favorable.

In cases from arsenic, the widest variation, in both physical and mental symptoms, is to be observed, and either exaltation, depression or weakness of mind may prevail.

Chloral has become a not uncommon exciting cause of mental disorder, as well as a complication in many cases of insanity in which it has been used to excess.

The dementia brought about by the abuse of bromide of potassium, is too well known to require comment here. It is accompanied in some cases by well-marked paralytic symptoms, and the damage sustained by cortical centres is so permanent in some instances that on cessation of the drug a hopeless hebetude will still remain.

Disorders of psychic functions from the toxic influence of iodoform have been reported in Germany, more especially.

Distressing forms of mental derangement have been known to arise from excessive use of paraldehyde.

The vegetable poisons of the second group above given are a most prolific cause of insanity.

The forms of mental disease arising from the poisonous effects of opium are too familiar to require description here.

In this regard opium is almost as great a curse in Eastern countries as alcohol is in the United States and Europe. According to all accounts there is a constant increase in the abuse of this drug in all parts of the civilized world.

The etiological relation of belladonna to mental disease has been recognized in several instances, and some cases have also been reported as due to atropine.

In some Eastern countries a considerable portion of all cases of insanity have been attributed to the toxic effects of cannabis indica. This drug is chiefly smoked in pipes, and it is known to be consumed in enormous quanties, and the artificial appetite thus generated is probably as powerful as that of opium or alcohol. The insanity caused by cannabis indica is said to be acute, with active sensorial disturbances, but with a diret tendency to dementia, which not unfrequently proves to be terminal.

Other vegetable poisons reported to have borne a causative relation to insanity are hyoscyamus, stramonium and tobacco. The latter substance may become the exciting cause of mental disorder in youths addicted to great excess in cigarette smoking. Tobacco excess is also an unfavorable complicating cause in a great many cases of insanity, so much so, that it is impossible often to say what portion of the symptoms are due to its influence until it is completely excluded from the case.

Cocaine exerts a fatal fascination over its victims, and there can be no doubt but that it may be the exciting cause of mental disorder in predisposed cases.

In South America the leaves of erythroxylon coca are chewed. They contain hygrine and cocaine with cocatanic acid. This habit is very common, and is carried to such excess that insanity sometimes results.

Astragalus hornii is a plant familiarly known as the loco-weed. It grows in the south-western United States, and in California and Mexico. It produces, when eaten by cattle, a long series of symptoms referable to disordered nervous centres, and finally the animals become so strange in their actions, that they are said to be insane, or "locoed," from the Spanish word "loco," which means insane. The action of this plant is well known to the natives, and especially among the Indians it is reported in some cases to have been used, and to have caused permanent mental impairment.

In the epidemics of ergotism which have appeared from time to time in Europe nervous and mental disorders have been prominent symptoms. The active and toxic agent in these cases is the the sclerotium of Claviceps purpurea, which grows on secale cereale. This toxic vegetable growth probably acts in a somewhat similar way to the parasite fungus on maize, which as an article of diet in Italy, more especially, acts with other causes to produce what is termed pellogrous insanity.

In the group of intoxicants and noxious gases, the first substance to engage attentation is alcohol.

It is impossible to estimate, even with approximate exactitude, the proportion of cases of insanity which originate from the toxic effects of alcohol.

Twenty per cent. of all cases of insanity were once supposed to proceed either directly from alcoholic abuse or indirectly from alcoholic parentage, but this is probably a high figure.

The main fact, however, remains, that alcohol in some of its seductive forms, is the cause of a great deal of mental disorder.

The relation which ether or chloroform bears to insanity is no longer doubtful, as it is well known that a chronic ether or chloroform-habit may end in decided mental disorder.

The relation between cause and effect is not so clear in maniacal outbreaks immediately following the administration of chloroform or ether for surgical purposes.

The writer recalls two instances of insanity following the extraction of teeth under anæsthetics. In cases of this kind it would be arbitrary to attempt to estimate to what degree the gas rather than trauma acted as an exciting cause, especially as traumatic influences in the area of the sensory trigeminal distribution are of all others most likely to provoke mental disturbances. The action of carbonic oxide, of sulphurous acid gas, and of ordinary illuminating gas, is of a sufficient toxic and permanent nature to cause disorder of the mental functions.

In the instance of carbonic oxide generated in the presence of a high degree of heat, the exposure to the latter is to be taken into account as a subsidiary cause.

The next group of eruptive fevers and of diathetic states has less apparent, though none the less real causative relations to toxic insanity.

The special poison, which in typhoid fever causes the parenhcymatous changes in the spleen, heart, liver and kidneys, also occasions lesions in the cerebral nervous centres of such a nature as to determine the mental disturbances. The psychic disorders which arise in the incubatory stage of the fever are the direct result of the special poison in the blood, and may consistently be termed toxic in origin. Likewise in the incubatory stage of small-pox toxic maniacal outbreaks may be occasioned by the direct action of the variolous poison.

This same event may occur in scarlet fever, though less frequently, as the insanity of scarlatina is more apt to be the outcome of a long series of organic lesions of kidneys and of other internal organs.

Another toxic origin of insanity is the general systemic poisoning in intermittent fever. The insanity and fever may replace each other vicariously. In fact mental alienation may be the chief, if not the only, objective symptom in "febris intermittens larvata."

It happens occasionally in attacks of acute rheumatism, that insanity suddenly develops itself at the same time that there is an intermission in the articular symptoms. It is then said that the disease has gone from the joints to the brain, and some speak of metastasis and of cerebral rheumatism in these instances. Waving all hypotheses, the clinical fact is, that the joint affection and the mental disorder may fluctuate with each other, so that there may be a remission of one or of the other class of symptoms. This was typically the case in a young woman under the writer's care, in whom active delusions and hallucinations appeared or vanished in accordance as the articular inflammation ceased or returned. It is more than likely that both these bodily and mental symptoms in rheumatism are due to a common toxic cause, and their vicarious interchange would seem to sustain this view.

In gout and in lithæmia psychic disturbances occur occasionally, and it is believed that they are due to excess of uric acid, and to other changes in the blood, constituting virtually a toxic condition, so far as the nutrient supply of the nervous centres is concerned. This condition is especially apt to arise in high livers past fifty years of age with podagrous heredity.

There are certain cases of insanity arising during the puerperal state, or soon after childbirth, which are considered to be of toxic origin. The mania is apt to be sudden and active and convulsions may occur and furnish additional support to the theory that the symptoms are due to a toxic state of the blood.

In a number of cases of puerperal fever, Bourget claims to have found highly toxic ptomaines in the urine, and the general severity of the symptoms in these cases corresponded with the degree of toxicity of the urine.

Insanity may be a sequel of the disease known as "la grippe." At least this was the direct and only exciting cause assigned in some cases which have come under the writer's care. It is known that in "la grippe," the meningeal, as well as the pulmonary membranes, may be the seat of inflammation, and all the symptoms are probably due to some special infection. Whatever the "materies morbi" may be, it is in some cases, as judged by its effects, distinctly toxic, and the resulting mental disorder may be considered as springing from the special morbific agent.

Cases of insanity from cancer have been reported. No case of this kind has come under the writer's observation, though it is not difficult to conceive, that in advance cases of cancer, there might be a reabsorption of septic material and a toxic occasion of psychic disturbance.

The mental diseases produced by the late lesions of syphilis are too well known to require mention here. The general constitutional infection by the luetie virus may be so severe as to derange the intellect, and the mental disorder thus arising is practically toxic in origin, and due to the systemic presence of the specific virus rather than to any pathological tissue changes.

Finally, there are auto-intoxications, which may cause mental disorders. Space will not permit more than a mention of the putrefactive alkaloids supposed to be formed by the action of bacteria on organic matter, and known as ptomaines, or of those basic substances, which result from metabollic changes in the bodily tissues, and which are called leucomaines. The main point is that these toxic substances may cause mental disease. It has long been known to physiologists that certain excretions contained substances poisonous to the organisms excreting them, and it is not a matter of surprise that auto-genous poisons should be found in the execretions of the human body.

Bouchard estimates that a sufficient amount of poisonous alkaloids are daily formed in the human "primæ viæ" to prove fatal if absorbed.

The albumoses are among the most powerful auto-genous poisons, and they have been found in the urine in cases of insanity by Köppen, who says that albumosuria is more common in these cases than peptonuria.

Two other investigators, Kollnitz and Fürstner, also report the frequent finding of albumose in the urine in cases of mental disease.

A number of writers might be cited to sustain the main view here advanced, that auto-genous poisons enter the circulation and act directly on the central nervous centres with sufficient toxic force to produce mental disorders.

It is to be hoped that the day is not far distant when these poisonous alkaloids will be isolated and studied as to their physiological effects, and as to their antidotes, so that at the same time that mental derangement from a special toxic agent is diagnosed, the antidotal remedy for the disease may be suggested.

The object at this time of thus presenting this summary review of the toxic origin of insanity, has been not so much to offer original material for the consideration of my expert hearers, as to call for an expression of skilled opinion on this important subject.

FRIEDREICH'S DISEASE ACCOMPANIED WITH TROPHIC TROUBLES IN AN EPILEPTIC.

Dr. Lzczypiorski gives the history of a case in the June number of "Annales Medico-Psychologiques," where Friedreich's ataxia was associated with symptoms quite foreign to the ordinary history of the disease. Friedreich's ataxia is a disease of early life, of long duration, hereditary, or at least a family disease, characterized by inco-ordination of movements, but with preservation of muscular strength and associated with disturbance of speech, nystagmus, a special deformity of the feet, and by the absence of pain, sensory and trophic troubles, and by the integrity of the intelligence.

A summary of the patient's condition, as described by L., is: Friedreich's ataxia, epilepsy, imbecility, trophic troubles, ataxic movements in general, tabetic gait, difficulty in speech, nystagmus, deformity of feet, preservation of muscular strength. absence of heredity. J. C.

A STUDY OF THE SENSORY AND SENSORY-MOTOR DISTURBANCES ASSOCIATED WITH INSANITY, FROM A BIOLOGICAL AND PHYSIOLOGICAL STANDPOINT.[1]

BY H. A. TOMLINSON, M.D.,

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THIS is a second and more comprehensive attempt to apply the theory of evolution in the study of the various manifestations of insanity; studying the subject, as stated in the title, from the standpoint of development and function. In my experience with the insane, I have often felt that clinical observation and pathological anatomy did not furnish sufficient data for the thorough understanding and proper appreciation of diseased cerebral functioning, more especially when their application to the cure of insanity is considered.

From this want has sprung, I believe, the therapeutic scepticism and, in some cases, almost nihilism, which biases the minds of a great many asylum physicians. If, however, we apply the theory of evolution to the study of our cases, we are furnished with a working hypothesis which, to my mind, explains the facts as nothing else will. It seems to me, therefore, that there is room in the realm of scientific psychiatry for the builder of hypothesis, as well as for the pathological anatomist.

To the physician associated with the insane, as they are seen aggregated in asylums, insanity and the disorders associated with its various forms make a different picture than they do to the physician in general neurological practice. The asylum physician's continuous and intimate association with his patients, gives him opportunities for comparison and generalization which do not come to those outside, who see their patients at most daily, and generally at much longer intervals; consequently the asylum physician sees more conspicuously marked, the individuality of the patient, and by comparison he is enabled to see more clearly the influence of environment and association, in the production of insanity, independently of morbid conditions.

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[1] Read at the meeting of the American Neurological Association, New York, June 22, 23 and 24, 1892.

The study of sensory and sensory-motor disturbances and their significance has been definitely developed by the neurologist, in connection with functional disturbance and gross lesion of the brain and general nervous system, and, as a rule, independently of any association with mental disturbance. This is natural; because, in the first place, patients manifesting both conditions are generally secluded in asylums, and on account of their mental disturbance do not make profitable material for objective study; but probably principally because the insane patient lives so long, and the sensory and motor disturbances vary so much, that the modern pathological neurologist, who lives but to verify his diagnoses post-mortem, has not the patience to continue the study. It has sometimes seemed to me also that the neurologist, while knowing the physical basis of insanity, does not fully appreciate that the manifestations of consciousness depend upon cerebral functioning, and that the mind, so called, is not an entity, therefore its disturbances are due to the same causes which produce disturbance in the general nervous system. Furthermore, the sensory and motor disturbances associated with insanity are seldom due to spinal or gross central lesion; and, consequently, are more truly indicative of abnormal and perverted cerebral functioning than are those dependent upon rapidly destructive nervous disease or gross brain lesion. The primary difference between sensory and motor disturbance occurring in insanity and general nervous disease, is the marked tendency to variation, and appearance and disappearance of the symptoms in the former, even where the sensory manifestations and disturbance of motility are as apparently persistent as in gross lesion of the brain and spinal cord. To study understandingly the nature of sensory and motor disturbance in insanity, it becomes necessary to erect a pathological framework, into which the various manifestations can be fitted more or less accurately; and as the absence of definite lesions in most cases leaves us no tangible pathological entity upon which to base our deductions, it becomes necessary to formulate an hypothesis, to explain the functional disturbance which originates and accompanies the perverted and excessive sensory and motor activity in these cases. There remains a certain percentage of asylum patients, who are suffering from actual gross lesion of the brain and spinal cord; but these cases in no wise differ from those due to general nervous disease independent of insanity, and, therefore, do not afford material for discussion here. The pathological history of insanity is known to be vague and indefinite, and from an anatomical standpoint furnishes very little information to the student in search of definite morbid changes which will explain the clinical manifestations of diseased cerebral functioning. This apparent absence of definite anatomical change I believe to be inherent in the conditions which give rise to insanity; and in the fact that the majority of cases of insanity, which furnish material for post-mortem study, have, though furnishing widely different clinical pictures during the earlier manifestations of disease, existed in terminal dementia for a sufficient length of time before death to obscure any definite pre-existing lesion in the general degenerative changes common to them all. Even in those cases where post-mortem definite lesions are found, the history of the progress of the case will show that the symptoms which the lesion apparently explains, have been engrafted upon pre-existing insanity, and have only an accidental relation to the primary condition. In the remaining increment of cases, where insanity has followed gross lesion of the brain, the perversions by which it manifests itself are in no wise different from those where no such lesion has been found to exist.

In another paper on a related subject, I made the statement that the study of the process of degeneration in a single nerve-cell, and the application of the result to the study of the whole mass, would enable us to get a clearer idea of the general conditions present, than an anatomical study of the brain substance. This mode of studying the functional derangements of the nervous system I have found equally useful in the study of insanity in general, and the associated sensory and motor disturbances. All sensory and motor manifestations, physiologically considered, represent different modes of motion resulting from activity of the nerve-cell; and this activity is constituted in the chemical changes which take place in the unstable complex organic material of which the nerve-cell is composed. The tendency in the potential nerve-cell is to manifest its activities along definite lines, the degree and nature of the activity being dependent upon the character and force of the stimulus. Beside this perceptive and energetic activity there is evidently, from the arrangement of functional cells throughout the nervous system a relational and associative activity, so that a stimulus of definite character not only sets up a reactive motion in the nerve-cell, but on account of association, sets up a similar activity in other nerve-cells; and a relational activity in a contiguous association of nerve-cells, so that the final reaction to the stimulus is made up of a series of simple reactions of varying intensity, but of analagous form, grouped into a complex, representing a definite discharge of energy. We have only to carry this synthesis a little further and combine a series of these complex groups, until we reach the culmination in the immensly complex activity represented in a series of co-ordinated somatic activities. By a reversal of this process, in analysis, we can trace the complicated stimulus through the various perceptive channels to the receptive centre, and its distribution to the cortical mass. The chemical activities involved also follow a definite course, representing so much genetic and so much destructive metabolism, the sum of which is the reconstruction of the nerve-cell, and the reconstitution of its potentiality; at the same time that there is the formation of a series of chemical compounds, more homogeneous in type and more stable in character, consequently having no potential energy; but instead, calling forth other activities for their elimination. The persistence of these activities tends to their development along definite lines, so that finally only a minimum amount of energy is required for their manifestation. As a corollary of this we have the implication that all parts of the nervous mechanism, and especially the cortical mass, must retain their integrity, in order to insure the persistence of this definiteness and uniformity in the manifestations of motion. If we assume, as stated elsewhere by the writer, that the nervous mechanism in the fœtus is endowed with a definite potentiality, and I believe that this proposition is supported by biological and physiological data, each nervous-cell is endowed with a definite amount of energy, or, in physiological terms, a limited amount of irritability and capacity for reconstitution. In a normal nervous system this potentiality would be equal in all its parts; but if, as is usually the case, the individual has some imperfection of devlopment, some parts of the mechanism will have a lesser potentiality than others, and will be, therefore, relatively weaker, and in a condition to succumb to a smaller strain. On account of the dual function of the brain; that is, the control of somatic and mental life, an hereditary weakness of that part of the nervous system controlling somatic activities, would result in a relatively lower potentiality in the nerve-cells involved; and the converse of this would obtain, if the lesser potentiality involved that part of the brain concerned in mental functioning. Again, in the progress of development, the environment and experiences of the individual governed by the laws of organic development would further affect the potentiality of the nerve-cell, both generally and relatively; so that all activities would be equally potent, or in those subject to over-use and special strain, there would be loss of some of their potentiality and a consequently lessened capacity for reconstitution. Taking, then, an individual who from hereditary or acquired causes has a relatively imperfect nervous structure, we would expect to find, as we do, that at times of special strain, such as the advent of puberty, the exigencies of social and industrial life, or the climacteric, they would display some signs of disturbance of the normal definiteness and uniformity of the activities of the nervous mechanism-motor or visceral, if the somatic functions were imperfect, and mental if that part of the functional mechanism was weakest. Of course the degree of disturbance would depend upon the amount of imperfection, and the character of the disturbance would be determined by the environment of the individual. Taking this thesis as a guide, let us study the gross manifestations of disturbed functioning of the brain and general nervous system under the conditions here premised.

All of the sensory and motor symptoms produced permanently by pressure, or gross lesion of the brain or cord, are produced temporarily by cell irritation or exhaustion, occurring during the course of chronic meningitis, sclerosis, or atrophy. By their gradual devolution they show the transition from the complex and heterogeneous to the simple and homogeneous, as in the dramatic purposive more or less perfectly co-ordinate motor expressions of hysteria, through the various violent motor discharges occurring in mania, to the automatic associated movements present in dementia; or the tremor and ataxia of maniacal exhaustion, through the gradually increasing inco-ordination and paresis of alcoholic or syphilitic degeneration, to the complete motor abeyance seen in the latter stages of these diseases and general paralysis. Two cases occurring in my experience, illustrate this degenerative transition of motor activities, and another, of mental activities. The first, a case of syphilitic brain disease, showed on admission, following a severe convulsion, paraphasia, myotonia, and paresis with tremor; also almost complete inhibition of intellectual function, with suspicion and blind resistance toward any effort in his behalf. He gradually became worse; the paraphasia becoming complete motor aphasia, the myotonia degenerating into athetosis with astasia-abasia, and finally ending in excessive general tremor, with complete motor inco-ordination. At this stage another profound convulsion occurred, with a right hemiplegia. This was followed by gradual recovery, passing upward through the different stages traveled on the downward path, until he was able to walk about, feed himself, and speak intelligibly. This transition was repeated, with varying degrees of uniformity, three times in eight months; each transition showing the stages less well marked and being of shorter duration, until, following another severe convulsion, there was complete annihilation of mental life and voluntary motion, leaving only a vegetating mass of organized protoplasm.

The other, a case of general paralysis in the third stage, developed the symptoms typical of Thomsen's disease; this degenerating into an ataxia, resembling in its progress that form described as Friedreich's, and this followed in its turn by astasia-abasia, finally degenerating into a general athetosis with spastic tremor, and complete muscular inco-ordination. However, after even the simplest co-ordinate movement became impossible, each group of muscles could be made to contract firmly and co-ordinately, by a comparatively weak faradic current. The mechanism of speech went through a regularly progressive failure, beginning with explosive automatic utterance, and ending in complete aphonia. As long as there was any means of demonstration, automatic consciousness remained active. After a period of ten days he began to travel upward, over the same ground he had traveled downward, until he was finally, at the end of two months, able to walk about; and pari passu, automatic consciousness gradually gave way to active consciousness and the manifestation of considerable intelligence. During the transition described, the vegetative functions remained intact, because, as we would anticipate, they were the most automatic. The third case, illustrating intellectual degeneration, occurred in a young girl, a low grade imbecile, who was admitted to the First Minnesota Hospital, with a history of epileptoid convulsions, with rapid mental reduction. On admission, she could express her wants, answer questions, and care for herself. Degeneration, however, proceeded very rapily, paresis became marked, and she finally became bedfast. The vegetative functions remained intact, and the excrementary functions were automatically performed. She is now well nourished. Her muscular activities are automatic, like those of an infant, and her mental functioning is entirely rudimentary. She laughs and cries like a baby, but has no articulate expression, and is entirely without comprehension of spoken words—indeed she is in fact an infant, without capacity to relate or co-ordinate external impressions.

If my hypothesis, thus illustrated, is tenable, the deduction follows that the cerebral cortex is the originator of all the activities of the organism, and that those manifested automatically by the spinal centres, which we find in the reflex mechanism, are the result of the division of labor caused by evolution, and represent the development from the simple and lowly organized, to the complex and highly organized. These activities as they become organized, also become more and more uniform and persitent, until, without the intervention of active consciousness, they respond definitely to external impressions; leaving to the active consciousness the cognition, recognition, and relation of the constantly recurring new external impressions. It follows then that any breach in the integrity of the cortical function would produce disturbance of the uniformity and definiteness of its activities, while the reflex mechanism, subject to the same source of disturbance would react irregularly, giving rise to centrifugally excited activities without correspondence to external stimuli.

For convenience of study, the sensory and motor disturbances associated with insanity, may be arranged as folows:

Sensory.—Disturbance of general sensation, including anæsthesia, analgesia, paræsthesia, and disturbed muscular sense; disturbance of the special senses, including auditory, visual, olfactory, gustatory, and tactual hallucination; illusion, manifested by associated perversions, and lastly, visceral hallucination.

Motor Disturbance.—Tremor, local or general, automatic associated movements, paresis and paralysis, involving special muscular groups, or general muscular function, vaso-motor disturbance, spasm and convulsion.

Analysis of these different forms of disturbed functional activity seems to me to lead inevitably to the conclusion that even in their most complex manifestations they are simply the outcome of increased or decreased irritability in the functional nerve cell; their complexity depending upon the number of functional groups associated, while they are manifested in their simplest form by the general involvement of the cerebro-spinal mass. The difference between hyperæsthesia and anæsthesia is only one of degree, as is that between paræsthesia and analgesia. Disturbance of muscle sense represents loss of the definiteness and uniformity of the activities involved, as do the different disturbances of the special senses manifested by hallucination. The difference between tremor, and spasm or convulsion is also one of degree—the one being a continuous excessive manifestation of cell irritability; the other, irregular explosive discharges of energy. The irritability being produced in the once case by exhaustion or auto-infection, and in the other by stimulation from pressure or the presence of some toxic material. Visceral hallucinations, in connection with insanity, are, in my experience, always the result of perverted impression, or more accurately speaking, a perverted relation in consciousness of visceral impressions. This is illustrated in varying degrees by the different disturbances of excretory function; beginning with the constipation and retention of urine, associated with acute maniacal and stuporous states, where the domination of active by the automatic consciousness annihilates the visceral impression, or the inhibition of conduction interferes with their transmission; and going on to the systematized delusions present in hypochondrical melancholia, although in the genesis of the systemized delusion there is apt to be an association of hallucination with illusion, as in the individual who believes that he cannot evacuate his bowels because they are paralyzed, or that he dare not let them move for fear that they will be extruded in the act of defecation; and built upon this the belief that on this account he must not eat, because the accumulation of food will burst him open. A case occurring in my experience is interesting, as showing how a systematized visceral delusion may result from a vivid external impression associated with another individual. The patient, the subject of agitated melancholia, refused for a year to eat, and resisted to the utmost any effort to evacuate her bowels, stating that her "anus was closed," and nothing could come from it; also that it was impossible for any food to stay on her stomach. There was no history of gastric or intestinal disturbance in this case; but the patient's husband had suffered from hæmorrhoids, which, for a long time, produced violent spasm of the sphincter during every effort at defecation, and her only child had suffered for a long time from dyspepsia, accompanied by vomiting and great suffering.

Illusion represents the purest type of perverted mental functioning. As ordinarily defined, however, illusion and hallucination are confounded. This confusion of definition is due, I believe, to the fact that these conditions so often co-exist and merge into each other. However, it seems to me, that if the conditions which constitute them are carefully studied, there ought not to be any difference of opinion as to the term of the definition. Subject to the personal equation in my own case, I would define an hallucination as the presence in consciousness of a series of impressions coming through a special sense, which have been perverted in transmission, or imperfectly related in the receptive centre. Whereas an illusion is a picture, of which a dream is the type, which is projected on active consciousness from the latent or automatic consciousness, and is composed of a series of analogous pre-existing impressions, incongruously arranged. The persistence of an illusion or hallucination constitutes a delusion, which is therefore always a secondary condition. I know that this is not the usual definition of delusion, but I have never seen a case of insanity in which I have not been able to trace the delusion present to an antecedent illusion or hallucination, or both. The reason for this confusion in definition of these mental perversions is, I believe, that the conditions which give rise to them are not carefully enough analyzed in their earlier manifestations. The forms of insanity with which the various sensory and motor disturbances are associated, further confirm the generalization as stated. In states of exaltation, such as are present in maniacal hysteria, the different forms of mania, and in general paralysis in the second stage; all of the forms of sensory and motor activity are present in excess. The normal irritability of the nerve-cell is increased, but as a result of this excessive activity, impressions from all external sources are carried so rapidly and are so various that their cognition in consciousness is interfered with, and there follows imperfect relation and recognition, with resulting irregular inco-ordinate discharge of nervous energy, or in the terms of our generalization, a disturbance in the definiteness and uniformity of the activities of the functional nerve-cell. This is illustrated in the course pursued by the sensory and motor disturbances accompanying an attack of acute mania. The first manifestation is, as a rule, self-absorption and irritability; or, in other words, external impressions cease to be accurately cognized and related, and consciousness is dominated by the effort to overcome the resulting confusion; therefore external impressions are not fully recognized, and the resulting discharges of energy are imperfectly co-ordinated. Now, if a sufficiently strong external impression, as a request or command, or contact is made to break in upon this concentration of effort, there results an irregular discharge of nervous force in the form of a petulant answer, or a violent outbreak of passion, accompanied by more or less violent motor activity in the form of an hysterical seizure, or even an assault. The confusion increases, the irritability becomes greater, until finally the inco-ordinated discharges of nervous force become continuous. Any one can witness out of his own personal experience, that these disturbances may occur in a modified degree in the sane individual when suffering from anxiety, or under great mental effort, and in the presence of acute pain. As the disturbance increases, the movements become less and less co-ordinated, until finally, as exhaustion supervenes, the ravings become a confused whisper, the movements degenerate into a general tremor, and annihilation supervenes. Or again, the confusion and inco-ordination reaching a certain degree of intensity, begin to subside, and the path is traveled backward, until definiteness and uniformity are again reached. The variations in this picture represent simply differences in degree, due to relative imperfections in the nervous mechanism in which they originated; while their persistence and termination will be governed by the extent of the imperfection, and the environment of the individual. From this typical order of manifestation all the partial forms of disturbance can be differentiated by recognizing that some parts of the nervous mechanism may retain their integrity, when that of other parts is more or less completely lost; and this is especially true of the more automatic activities, which require less expenditure of energy for their manifestation.

As a summary of the arguments based on my hypothesis, and the illustrations given, it seems to my way of thinking, that the following deductions are logical and warranted by the illustrations. The application of the theory of evolution to the study of the development of the nervous system, and the normal manifestation of its activities, furnishes the best and most satisfactory basis for the study of the hereditary and acquired imperfections in its structure, with the resulting abnormal manifestations of functional activity, as well as the influence of the environment of the individual in determining the nature of the perversion. When we consider that the activities which, under the conditions resulting from heredity and environment, are normal in one individual, may be, under the different conditions surrounding another individual abnormal, we are placed in a position to appreciate the influence which the conditions of individual experience have in the development of perverted functional activity in the nervous mechanism: and as a corollary of this, the indication which these factors furnish for the alterations of environment necessary to subdue the undue activity and restore functional equilibrium. Again, with regard to the perverted sensory and motor activities themselves, it would follow that in an individual with inherited general imperfection of structure, the disturbance following strain or over-use would have the greatest tendency to uniformity in type; whereas any reduction in potentiality in the nervous mechanism due to hereditary weakness of a special part, or its disproportionate use, would result in variation in type with the disturbance most conspicuous in the part least able to bear the strain. This is illustrated most conspicuously in the changes which occur in the sensory and motor disturbances accompanying ordinary senility, natural or premature, and in that premature explosive form of senility which we term general paralysis of the insane, where the somatic reductions are most conspicuous in those cases where physical strain is the greatest, and mental reduction in those where psychical strain has been excessive. In conclusion I will venture the opinion that it is in the direction which the theory of evolution leads that we must look for future progress in the study of insanity and its associated disturbances, especially when its prevention and cure are the objects sought, and we must look to biology and physiology rather than to pathology, for our guide in these studies.

I am aware that this paper is composed almost entirely of general statements, with little elaboration; but the limitation of time and the general character of the subject has made this necessary, lest from insufficient elaboration some parts of the argument might lose their due weight, while any attempt at discursiveness would be contrary to the object of the paper. It has been my object to present these generalizations from my personal observation and experience with the hope that they might excite discussion, and suggest to others, who, like myself, feel the limitations which clinical observation and morbid anatomy throw around our work, a method of study which may in their hands, with larger opportunities for observation and experiment, clear away some of the difficulties which now surround the study and treatment of diseased cerebro-spinal functioning.

While these studies have been based upon my own observation and experince, I am gratified to find that similar studies have been reported recently by others, eminently more fitted by experience and skill, in different forms of diseased nervous functioning, as well as in some of the other provinces of medicine. Notable among these are the "Harveian Lectures" for this year, "On Common Neuroses, or the Influence of the Neurotic Element in Disease, and Its Rational Treatment," by Jas. F. Goodhart, M.D. "The Bearing of Recent Biological Researches on the Practice of Medicine and Surgery," by G. Sims Woodhead, M.D. Also the "Lumleian Lectures" "Certain Points in the Etiology of Disease," by P. Pye Smith, M.D. All of these have appeared in the *London Lancet* since the first of the year. These studies have for their basis biological and physiological research, and the deduction from them is that the study of development and the normal performance of function, with the influence of environment in modifying the resultant activities, is the best basis for the study of abnormal functioning when it occurs.

A NEW CONSIDERATION OF HEREDITARY CHOREA.*

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HEREDITARY chorea, or Huntington's chorea, has attracted some attention during the past six years, considered variously as a new form of the disease, chorea, or as an entirely new disease. So new is it that hardly any mention of it is to be found in the text-books of the time. It is, however, beginning to assume a more well-defined form. An acquaintance with several cases of this disease has made me feel keenly interested in the few and slight references and the few articles that have appeared in the current medical literature; for in current literature is to be found almost all that is to be known of the disease.

To bring the disease plainly before you, for the consideration which is to follow, I will attempt a definition.

Hereditary chorea is a disease, manifested by choreic movements, beginning at adult life (usually about forty); commencing insiduously and increasing slowly, but steadily; having a strong and almost always effective tendency toward mental weakness, irritability, and dementia; and progressing inevitably toward exhaustion and death.

A brief page of review of the growth and literature of the subject is almost essential as a preliminary to its study. By an examination of the writings upon the disease, we find that it was first noticed in print, in Dunglison's Practice, in 1841, he giving a letter from Dr. Waters, of Franklin, N. Y., describing the disease. Dr. Lyon, in 1863, reported three representative cases,[1] as indicating a disease, new (to him) in medical literature. Dr. Huntington, in 1872, read a paper[2] on Chorea, at Middleport, Ohio, and first succeeded in calling much attention to the hereditary form. He describes it (as far as he has learned) as only found at the eastern end of Long Island, where he, his father, and grandfather had lived, and had noted its progression.

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So evidently few were the cases that Sinkler, in 1889,[3] reports that only nine writers had reported cases. Of these, only one writer was in this country. Clarence King,[4] in 1885, reports a case in an inaugural thesis, and again, another in 1886, and a third in 1889. Clarence King's father also lived in Long Island, and he theorizes that all of the cases might be, perhaps, traced to an origin there.

Landouzky reported a case in 1873; Ewald, two cases in 1885; Peretti, a case in 1885; Huber, a case, with review, in 1887; Lepilli, a review, in 1888; West, some cases in 1887; Zacher, a case in 1888; Hoffman, a case or series in 1888; Lannois, a series and a review in 1888. Sinkler,[3] in 1889, gives a very complete review of these preceding cases, and adds two cases. Herringham,[5] in 1888, considers the subject. Kornhiloff, Biernacki, and Jolly have reported cases. In this country, Bower[6] has reported two cases. In 1889, Diller[7] makes the first report representing insane asylum population.. Seemingly, this element should have been thought of earlier in consideration of the strong tendency toward dementia in these cases. Hay,[8] in 1890, makes further report, representing the same element in population. In March of the present year, Sinkler[9] again presents a paper, bringing the subject up to date, and adding two cases from the Philadelphia Hospital wards.

With four more or less comprehensive reviews of the subject, three of them in this country in the last four years, I am not, therefore, writing for a review, but to take the standpoint already attained and to advance both new cases and comments upon the subject.

The subject, as thus far developed, is that of a comparatively few number of families, in which the disease appears at adult life, with more or less distinct heredity.

In considering the literature and my own cases, there was one indication, it seemed to me, in favor of another presentation, besides the typical cases to be presented. The thought lay in this way: The cases so far reported have been chiefly reported as developing locally and as few and rare. Probably they seem rare, simply because the only ones these observers have heard from, while they may be proportionally as common all over the United States.

This thought was given strength by the fact that we had had five cases of adult chorea in our asylum, or one to six hundred admissions. Of these, three had a clear history of heredity; while of the other two the history was not obtainable. These cases, tending to come to insane asylums, on account of their mental weaknes, I wrote a circular letter to fifty insane asylums of the United States, representing all parts of the country. I have received replies from twenty-four different asylums.

Of these twenty-four asylums, eight asylums report eleven cases and two more in the past records, of which the history is not furnished. Thirteen cases are reported which I cannot include, because of the doubtful or unknown heredity. Four asylums report no chorea of any form; five specify no chorea of hereditary character. The results of this investigation, therefore, have not been so great as I had hoped. And yet I am able to report a number of new cases, equal to one-third of those previously reported, though they have somewhat meager histories attached. I have prepared a table as an appendix to, but separate from, this paper collecting the thirty-three series reported by other authors, which I have found given in sufficient detail; and, also, the thirteen new cases herewith reported by myself. These I have gathered in statistical form, trusting to thus bring the subject in a more comprehensive and impressive way to the consideration of the profession.

Having placed them thus in tabular form, I will but speak briefly of the cases now reported by myself.

CASE I.—Reported by J. W. Waughop, Superintendent of the Hospital for Insane, Fort Steilacoom, Washington. Female, living, married, age thirty-five years, four children, admitted in 1887. Has intense choreic movements of "twelve years' duration." "Her mother was affected as she now is;" "brother insane." Recently her oldest son has become choreic. She retrograded steadily in mind, as in "senile dementia," but, at the same time, had "delusions of grandeur" ("God is my lawyer") like a paretic.

CASE II.—Reported by Frank Norbury, M.D., Assistant Physician, Jacksonville, Ill. Patient, female, age thirty, divorced; chorea appeared seven years ago, has gradually grown worse; has been insane two and a half years; mind impaired, but fairly intelligent; symptoms "like apathetic imbecility;" no paretic symptoms; delusions of suspicion; knee-jerk increased; "cannot walk without assistance;" father was affected "late in life," and mind not much impaired.

CASES IV. AND V.—Reported from the Connecticut Hospital for the Insane, give only the statistical facts. No. 4 was choreic to death; at age of sixty-six showed progressive dementia, and father had same form of trouble. No. 5, male; choreic to age of fifty-four, living; disease progressive, and mother choreic in same way.

CASE VI.—Reported by Wm. B. Hall, Assistant Physician, Tuscaloosa, Ala. Female, age twenty-six, admitted 1888; has steadily progressed since. There is considerable of dementia present; no paresis; father choreic; patient has also "chronic nephritis."

CASE VII.—From Taunton Lunatic Hospital; has no details given. Patient choreic from forty-nine to death; father choreic in same way; mental state like acute mania.

CASE VIII.—Reported from Danver Lunatic Asylum. Patient choreic from the age of forty-one to death, at forty-six; progressive form; mental state resembles general paresis more than senile dementia. At the "inception of the trouble showed excitement and expansive ideas, followed by secondary dementia." The mother and mother's sister suffered in same way.

CASE IX.—Dr. A. Trowbridge, Assistant Physician, Danville, Pa., reports a case just admitted, whose mother was reported as choreic, and one brother and a sister insane (perhaps choreic?). This patient had a record of maniacal attacks, though, in appearance, "imbecile."

Dr. Trowbridge, who has made special study of chorea and epilepsy, also says that there are present seven cases of adult and "congenital" chorea, which, on the whole, "differs in no respect from the hereditary form, either in appearance, course or termination."

CASE X.—Reported by G. H. Hill, Superintendent, Independence, Iowa (in addition to two other cases previously in print). Patient, M., age thirty-five, living, shows chorea and progressive dementia. Patient's two sisters and her mother choreic.

Of the cases coming under my care, with undoubted heredity, I report three, as follows:

CASE I.—Female, age fifty-nine at death, married, nine children; chorea has been growing ten years. "Absent-mindedness" and "feebleness of mind" came on slowly and insidiously. Chorea grew along with mental trouble, as near as I can learn. She is said to have had early several "paroxysms of acute mania." On admission is said to "eat voraciously," and to "burn everything" as she gets opportunity. Admitted here, May, 1888; died here, December, 1889. While here was feeble-minded, quiet, and satisfied. Her talk was somewhat irrelevant; she claimed to get large amounts of money for staying here; had a satisfied air, however poor condition she was in, resembling in a mild way general paresis. She died of exhaustion, quietly and steadily, without fever, pain, cough or any complaint. Her mother, her mother's two sisters, and her mother's mother were choreic.

CASE II.—Female, age forty-two at death; admitted October, 1889; died March, 1890. Disease growing for fifteen years; only recently so bad as to need asylum care. Mental condition one of feeble-mindedness, like senile dementia, with despondency at her choreic condition. Has the most extreme trouble in eating; seems in great danger every meal. She holds food in mouth in clonic rigidity from one to four seconds, and then, with sudden gulp, swallows it down whole. Choking is frequent. Movements are so extreme, cannot feed herself at all. It is stated that "all of the family are more or less insane as they grow old." Her mother and sister were choreic; others also; but considerable correspondence fails to bring out the relationship.

CASE III.—Female, now aged fifty-three, living; admitted March, 1891; left unimproved January, 1892; widow, two children. Her father died by suicide, after eight or ten years of progressive chorea of the same kind. A sister and a brother have the same trouble. The patellar reflex is considerably exaggerated, speech very thick as well as jerky. She manifests a quiet dementia, has a satisfied manner, not extreme, yet always present. Chorea and dementia progressive. Exhibits movements of whole body; facial movements; movements of hands; and walks in a jerky way.

Besides these three typical cases, I have two others whose history is completely unknown, but whose disease is so typical in its elements, that I have always, in my personal opinion, included it in the same category. Though I have rigidly thrown out a large number of cases reported by others, because heredity was "unknown," or the disease of ancestors noted simply as "insanity," yet I will include these two with this explanation and with special purpose.

CASE IV.—Male, age about fifty; picked up in St. Paul; native of England. Exposure to cold while at work in Rocky Mountains is put down as cause. Admitted October 8, 1885; died March, 1892. During stay here showed a slow, gradual deterioration through all of the stages of growing weakness, both bodily and mentally. Talked of vasts amounts of property. Later, thought the Queen of England was his wife. Delusions were not systematized, but did not change rapidly, nor were they prominent. His talk was jerky and accompanied by jerks and cortortions of limbs, body and face.

He walked always in a shuffling, hesitating manner. His dementia was such that we were never able to get his previous history from him. Patellar reflex exaggerated. He died from exhaustion in a lingering way, just as from general paresis. He had always a quiet, satisfied mind.

CASE V.—Male, age forty-seven; admitted August, 1890; married; also picked up in St. Paul. His delusion was that he was to get a million dollars for standing back and allowing Harrison to be President instead of himself. Exalted ideas constant, but rarely spoken of. Dementia quite profound. He says his brother and others are the same as he is. It is almost impossible to get history from him, in spite of willingness to talk; has a quiet, satisfied manner; has had several excitable spells; is now living.

From these cases what do we learn concerning prominent characteristics? The most prominent one, or the one made most prominent, is *heredity*. But most asylum observers note cases in which no history of heredity is given. If these were few enough, they could be considered as the first of a family series. But the testimony indicates that the number without history of heredity exceeds, by several times, the number known to be hereditary. This fact was also found true by Diller,[11] in his similar investigation. With such scant history as comes to an insane asylum, it is probable that many of these are hereditary. But, by a general form of reasoning, it would seem very reasonable to suppose that the cases not having heredity and the cases of unknown heredity, if they manifest the same symptoms, in the same progressive way, and finally die in the same state of exhaustion, would have the same pathological findings, and, indeed, be practically the same disease. This reasoning has, however, been slighted by writers, and the tendency has been to speak of the disease as a distinctly new discovery. Then, too, these series must all have a beginning.

In my table, however, selected by heredity, a more strongly marked heredity than is seen in almost any other disease is prominent as a symptom.

The next most important element is a *progressive nature toward dementia, exhaustion, and death.*

Most of the cases die of the choreic exhaustion in about the same manner as general paretics die. It seems probable that *all* would so die if the duration did not allow of intercurrent affections. This progressive character belongs to the chorea (as well as to the mental state) and the chorea frequently begins as a local trouble, gradually becoming general.

The next important element is probably *the character of the mental change.* Although different words are used to describe it, it seems to me essentially the same in all cases, reading through the terms used, as I do, by means of context and is usually a quite symmetrical brain failure. For instance, one case is spoken of as melancholia and going on to dementia. Knowing that the dementia may have, as many senile dementias do have, a melancholic or maniacal tinge from the start, I, by the hints added, infer it to have been essentially dementia from the beginning. Nearly all reports, however, speak unmistakably of "dementia" or "weak-mindedness," coupled very frequently with somewhat of early irritability or violence.

Last March I took occasion to call attention in print[18] to the general broad resemblances between general paresis and hereditary chorea. I thought myself to be the first one noting the same, but see later that Hoffman[19] makes passing note of the same resemblance from the standpoint of the finding of "meningitic lesions" and "cortical atrophy."

Although I started from a quite widely differing standpoint, it seems to me that, as shown by my five cases (three watched until death), as the two diseases progress, they come together into quite closely similar conditions, and finally die in about the same exhausted way—exhaustion, not from activity, but apparently from a gradual withdrawing of life-power from the nerve centres.

At least this is the impression made upon me by my cases; and the clinical histories given by others seem to indicate exactly the same course of the disease. Let us look at the points of similarity.

1. It begins at adult life. This is as distinctive a feature as of general paralysis, and if one is to be regarded as a phenomenon of premature senile degeneration, so may the other as well. Whatever significance the one has, the other may have in like manner.

2. The mental change is essentially a dementia. In a tabulated series of over sixty cases of general paresis, personally examined, I find about one-half persuing a fairly steady mental degeneration, with little of the excited stage. On the other hand, many of these choreics present early irritability and violence. In early stages, therefore, the diseases are not far apart. Later, the mental states approximate quite closely. In four out of five cases of chorea personally seen, there was the same quiet mental satisfaction to the last. (In the other was mental feebleness, with a despondent, half-realizing sense of her physical condition.)

Still further, in two of my cases there were (somewhat feebly exhibited) the same exaggerated ideas as in general paresis. There was not, however, the facility in changing delusions, and the unsystematized character as in the extreme forms of paresis, but they quite closely resembled the quieter cases.

3. Motor appearances. These, though similar in appearance, seem to have widely different origin at first: the one, an inco-ordination of voluntary movement; the other, a series of involuntary movements. Still, the facial sluggishness toward the last, the clumsy use of hands, feet and tongue, and the general physical and mental helplessness present almost the same clinical appearance.

4. Duration. This is often two or three times as long as general paresis. But, perhaps, this more gradual mental and physical invasion would account for the less acute character of mental symptoms, and the lack of so pronounced excited stage.

5. The progressive and uniformly fatal character of the disease is about the same in both cases.

Now, with so much of similarity in motor and mental changes, is it unreasonable to expect as clearly allied pathological lesions? The *Annual*, of 1890, sums up pathological findings as three: McLeod (doubtful case) subdural hemorrhagic cyst; Huber, one case, with pachymeningitis and leptomeningitis; Klebs, one case, unknown. Since that time, Sinkler[9] has reported an autopsy with findings of meningeal congestion and œdema, and with dura thick, tough and adherent, and with microscopical examination rather indeterminate. Osler[11] has reported one case with a record of "meningitic signs" and with "cortical atrophy."

The two previous deaths from the disease, which occurred here, gave me no opportunity for post-mortem. But this year the death of number five (although I am not sure of heredity in his case), of typical character, gave me the coveted opportunity.

The gross appearances consisted of moderate adhesions and thickening of dura mater, with a pachymeningitis of the convexity. Atrophy of brain, especially the anterior part, was manifest at a glance on removal of dura. Serous accumulations were found under the dura and in the pia arachnoid. A kind of milky, plastic serous exudate was found, thickest on the convexity and in the sulci of the brain. This was whitish, and this combination was similar to the customary gross appearances of general paresis as found here, except in the amount of serous accumulation, and in its greater fluidity and the sponginess of the pia arachnoid. A pearly or ground-glass appearance of the floor of lateral ventricle was noticeable; also congestion of choroid plexus, and a cystic formation of the same in right lateral ventricle. Weight of brain, *with pia*, was 39¾ ounces.

The brain and cord presented no other gross lesions which were observed. It is now hardening in fluid for microscopical examination, and I hope later to report microscopical findings. In regard to gross cerebral appearances (whether the case be hereditary or not), it will be seen that I have to record a finding resembling, in a general way, the findings in cases of general paretics, as I before suspected possible from clinical observations. This gross pathological finding is, perhaps, not *conclusive* of anything, but it is quite suggestive.

This form of reasoning by analogy and from similar effects back to similar causes, is very attractive. It can, it seems to me, be used to form a working hypothesis. And the hypothesis once formed in this case, it is somewhat surprising to note the amount of evidence that falls into line. In like manner, if, in the future, hereditary chorea be clearly shown to have its pathology in the cerebral cortex, we can look back to simple chorea and note its slight mental changes, their similar character of symmetrical brain failure; the similar motor disturbances; and note also the now recognized fact that heredity in nervous and mental diseases is not by the identical disease, but in varying and chance directions, and argue the lesion to be a cerebral and cortical one.

In current literature we find similar tendencies, and strong ones. Recently, Trowbridge has shown strong analogies between chorea and epilepsy. Dr. Riggs[15] has restated the relationships of epilepsy and migraine, and Hoffman reports a case of adult chorea, with epileptic ancestors, which he considers "hereditary." Athetosis, seems also to have links of relationship to chorea.

In conclusion I would simply record my conviction that hereditary chorea is not so rare as previously thought, and that as knowledge of it becomes more general, cases will be found in all parts of the country; that the element of heredity will probably be set aside as only an extra-strong, predisposing cause, and the term "chronic progressive chorea" will accurately describe the condition; that as insane asylums will doubtless receive a large proportion of these cases, they should be urged to secure autopsies for the better elucidation of the disease; that modern literature shows a tendency to find relationship between these motor-disturbance diseases, which might possibly also extend to general paresis.

Finally, I would also insist, with conviction, upon the need and appropriateness of another term in our tables of mental disease. Choreic dementia designates a dementia on equal footing and right with paretic dementia, epileptic dementia, and senile dementia.

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AN ACUTE MYXŒDEMATOUS CONDITION OCCURRING IN GOITRE.

Dr. Osler recently presented to the Johns Hopkins Hospital Society a case which he regarded as very probably an instance of acute myxœdma occurring with enlargement of the thyroid.

The patient was of good antecedents and had never been ill. Present trouble began three months ago with constipation, stomach disorder, chilliness at times, and then swelling began in the face and hands, sometimes in the muscles of the arms. Face decidedly swollen and has remained so. Simultaneous swelling of thyroid gland. General health otherwise very fair. Face looks swollen and puffy, colorless lips and conjunctivæ, no exopthalmos, thyroid symmetrically enlarged; pulsation marked. Under use of fluid extract of ergot the patient has decidedly improved. Face still looks a little enlarged, but hands are not swollen. He is able to work, and there is no trace of mental impairment. J. C.

Neurological Digest.

ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM.

BY HENRY H. DONALDSON, PH.D.

ON THE RELATIONS BETWEEN THE WEIGHT OF THE BRAIN AND ITS PARTS, AND THE STATURE AND MASS OF THE BODY, IN MAN.

John Marshall (Journal of Anatomy and Physiology, Normal and Pathological, vol. xxvi., part iv. July, 1892. Pp. 445–500). The weight of the brain may be discussed simply as an anthropological fact, like stature or body weight, or from the more interesting side of the relation of brain weight to intelligence.

Any one who has at all considered the subject will readily admit that weight is but one of a complex of physical data which have to be taken into account when an inference is made regarding the intelligence, and also that one object of studying this matter is to show what influences affect the weight of the brain, because until these are determined, all inferences from weight to intelligence are worthless—a fact which is at present fully recognized. Such being the situation, this paper by Dr. Marshall is most timely.

It is full of significant and suggestive details, but there are two important points which may be singled out. First, it has been long recognized that in a given race the weight of the female encephalon was less than that of the male. It has further been maintained that this smaller weight in the female was not accounted for by the smaller body weight and stature of women.

Dr. Marshall finds that when the smaller weight and stature in the female are given their proper value in the calculations, the encephalon in the female is proportionately as heavy as in the male.

Second, he has occasion to compare the weights of the encephalon and its parts, taken from sane and also from insane subjects, and finds that though the relative weights of its subdivisions are constantly different in the two series, that nevertheless the figures for the entire encephalon are nearly the same under similar conditions.

In brief outline, the paper is somewhat as follows: Taking the observations of Dr. Boyd on 652 normal males over twenty years of age, and 715 females also over twenty years of age, he groups these in a table for each sex, in seven decennial periods, from 20 to 90 years. The average stature of the individuals in each group is about the same, being a trifle over 66 inches for the males, and a trifle under 62 inches for the females. These tables show a regular progressive decrease in the average brain weight with increase in age. Age, then, is one factor causing a decrease in brain weight.

To study the influence of stature he is forced to use another set of observations also made by Dr. Boyd. The average brain weights of 320 males and 325 females, all insane and over twenty years of age, are arranged in groups according to stature, and, as was to be expected, show that absolutely, both in males and females, the brain in the tall persons is heavier than in the short persons. If, however, the weight of the brain is divided by the number representing the stature of a given group in inches, there is obtained a fraction of an ounce of brain corresponding to each inch of stature. This is called the stature-ratio. This stature-ratio is smaller in the tall persons of both sexes than in the short persons. In general it is smaller for females than for males, indicating in the first place that in tall persons the brain does not increase in weight proportionately with the stature, and further that in women an inch of stature is associated with a smaller mass of brain. Combining the above data with still other observations, he finally exhibits, in tables, figures derived from 1,875 persons grouped according to both age and stature, and subdivided into sane and insane. This gives scope for a more elaborate study of the subdivisions of the encephalon, and at the same time brings out the relations between these in the sane and insane, while the general conclusions previously reached are verified.

Having found the stature-ratio less in the female than in the male, Dr. Marshall next undertakes to give a meaning to these results by introducing the mass of the body into the calculations. It becomes here an accurate investigation of the bit of common knowledge, that women are more lightly built than men. Hence an inch of stature in a woman would stand for a proportionately smaller bulk of tissue, and if the brain stood in a definite relation to the mass of the body, just such a relation as he found to exist regarding stature is that which the case would demand. The weight of the body is geometrically represented by a hypothetical upright, four-sided column of a height corresponding to the stature of the person, bounded by plain surfaces, and having a uniform specific gravity throughout. In the cases which are taken for examination, the weight of a slice or section of this column one inch thick, or the inch-section-weight is for the male 33.4 ounces and for the female 30.2 ounces. These two numbers stand to one another as 1,000 to 904, while the ratio of the brain weight derived from Dr. Boyd's observations are 1,000 for male and 903 for the female, a correspondence which amounts almost to identity and which serves to establish the main point.

The paper is open to the criticism that the averages are often taken by a faulty method, but it should be also stated that, as it happens, this fact does not invalidate the main results. There is a wealth of detail in this paper which defies condensation, but which at the same time gives it unusual value.

FURTHER CONTRIBUTIONS TO OUR KNOWLEDGE OF THE SLIGHTLY ELECTRIC FISHES.

G. Fritsch (Sitzungsberichte d. Königl. Preuss. Akad. d. Wissenschaften zu Berlin, xliv., 1891). An analysis in detail of this paper is not intended here, but there are several of the observations on the nervous system of these fish which are of general interest. The large ganglion cells which give rise to the nerve fibres innervating the electrical organ are located in the spinal cord. They have the position of cells in the ventral coruna of mammals, and their fibres form ventral roots.

A single axis-cylinder process arise from each cell and the protoplasmic processes arise unbranched, but soon fuse with those of neighboring cells by gross connections, which are, beyond all question, so that these cells form a common and continuous group. The nerves, destined for the electrical organ, have moreover the peculiarity that after they have left the spinal canal they undergo a partial decussation, forming a chiasma after the type of the optic chiasma. Again, at about this point in their course, the fibres undergo an increase in number by subdivision to such an extent that there are several times as many fibres entering the electric organ as leave the spinal cord.

As regards the union of ganglion cells and the subdivision of motor-nerve fibres high up in their course it can only be said that to the best of our knowledge these things do not occur in the higher mammals. If such be the case we have not a uniform plan of construction of the nervous system among vertebrates, but what is much better variation, which will probably turn out to be a graded variation. The idea of uniformity has had a depressing effect on histological anatomy, and the sooner it can be replaced by that of gradation in structure, the better. It is a fair statement that no adequate explanation of decussation in the nervous system has yet been offered. Certainly this instance is a very interesting one and is, after that of the laryngeal nerve in certain chelonia as observed by Dr. Wier-Mitchell, the second peripheral decussation of spinal nerves thus far recorded.

THE GROWTH OF MEMORY IN SCHOOL CHILDREN.

T. L. Bolton (American Journal of Psychology, Vol. iv., No. 3, 1892). The author has tested the memory span in some fifteen hundred school children of various grades, by dictating to them series of digits which they then wrote down. A study of these written records and a statistical treatment of the results enables him to draw a number of interesting conclusions, some of which are here given.

The extent of the memory span for the pupils in the public schools is six digits. The memory span increases with age rather than with the intelligence, as measured by the grade of studies pursued.

A good memory span is not necessarily associated with intellectual acuteness as measured by class-room rank. The girls have a longer span than the boys. When the series is too long to be perfectly remembered, the digits forgotten belong to the middle of the series. In other words, it is the ends of the series which are best remembered. In the process of being forgotten, the memory images suffer first a confusion in order, then the right digits are lost and wrong ones substituted for them, and finally digits are lost without any attempt at substitution. These tests yield as good results at the beginning of the day as at the end, showing that the pupils have not been fatigued for this particular kind of work by the school exercises of the day.

Periscope.

EXCERPTS WILL BE FURNISHED AS FOLLOWS:

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The Editor will not accept as Original Articles and Clinical Cases those that have appeared elsewhere.

Authors are requested to make none but typographical corrections on the proof sent to them. The manuscript must represent the final form in which the article is to be printed.

PATHOLOGICAL.

THE KINDRED OF CHOREA.

Octavius Sturges, M.D., F.R.C.P. (American Journal of the Medical Sciences, December, 1891), states that recent endocarditis with no further heart change is the cardinal anatomical feature in those dying with chorea without reference to rheumatism. But it is not constantly found, and some of the most striking examples of deaths by chorea are without it. Choreic endocarditis differs from rheumatic clinically and anatomically. Clinically it is without physical or general signs, often without rheumatism, and only disclosed post-mortem. Anatomically the inflammation is recent, its chief, often its only seat is the mitral valve, and there are no consecutive changes in the heart. The contrast to this condition is seen in rheumatic children with valve disease, who are, or have been, choreic. Here the physical signs correspond with well-recognized changes in the heart found after death, and due to rheumatism, not chorea. Choreic endocarditis is, therefore, not accurately described as a manifestation of rheumatism. Both chorea and rheumatism are liable to this inflammation, each after its own manner. The common feature may be taken as evidence that the two affections are pathologically allied, not that either of them is a form or expression of the other. The fact of this alliance is best seen by the observation of chorea in very early life, at which period it is often intimately associated with rheumatic polyarthritis in the same subject at the same time. But with growth, in obedience to the natural history of the two affections, and influenced by the several accidents of life, this association is relaxed and at puberty it has ceased to be intimate. Both chorea and rheumatism are, it is probable, members of a pathological group having arthritis for a common factor and of whose underlying source we are yet in search. A. F.

TREMOR IN EPILEPTICS.

Féré distinguishes two kinds of tremor in epileptics: one, which but little differs from the ordinary epileptic paroxysm, and another, which lacks from the first the characteristics of the attack. In the first case the patient, as usual, falls, becomes pale, utters a cry, and loses consciousness, but instead of a tonic period followed by clonic muscular contractions, one observes a rapid trembling, which is either universal or limited to the trunk, extremities and head.

In the epileptic tremor, par excellence, the tremor is the principal symptom and is not accompanied by loss of consciousness or spasms. It may extend over a period of several days. The writer describes two such cases. The one suffering from ordinary convulsive epilepsy, with vertiginous sensations, was attacked with restlessness and delirium, which soon disappeared, to be replaced by a trembling attack which continued for six days. The muscles of the extremities, trunk and face were attacked; the teeth chattered and the voice was wavering and unsteady. The tremor showed ten oscillations per second in the hands and seven in the feet. It was not severe enough to prevent the use of the limbs, yet it exacerbated from time to time such a degree that the patient would find it impossible to walk, and he would drop that which he had in his hands. It ceased during sleep. The other patient, also a pronounced epileptic, was seized one day with rigidity of the right lower extremity, accompanied with tremor of the thigh. The leg was lifted by the very energetic and spasmodic contractions of the quadriceps femoris. Six to seven rhythmic contractions per second were counted. This local spasm lasted a week, with momentary jerks of the extremity. During sleep it ceased. If the legs were forced to move, which was not entirely possible, the spasm would show a tendency, as in partial epilepsy, to extend to the upper extremity.—*La Semaine médicale-Norsk Magazin f. Laegevidenskaben*, No. 3, 1892. F. H. P.

CLINICAL.

CONTRIBUTIONS TO THE CLINICAL HISTORY OF FOCAL LESIONS OF THE PONS.

Dr. Martin Brasch (Neurolog. Centralbl., p. 225, 1892). The patient, who is the subject of Brasch's communication, was a physician, forty-seven years old, who had never had syphilis, neither had he inherited any neuropathic tendencies. In 1888 he had an attack of paresis of the internal rectus muscle of the left eye, and on the first of November, 1890, he had a relapse, and fourteen days later ptosis and paresis of the external rectus, and a few days later vertigo and paresis of the members of the right side. At the beginning of December the following conditions presented: Paresis of the abducens on both sides; on the right side paralysis of all the external fibres of the oculo-motorius, on the left only the internus. On the right there was also anæsthesia of the area supplied by the two superior branches of the trigeminus, and paresis of the muscles innervated by the facial. Left arm and leg paretic.

As the disease progressed the paralysis involved the four extremities; the ptosis of the left eye was somewhat intermittent, the patellar reflex diminished on both sides, and there was trouble with mastication, deglutition, and respiration, and consequent difficulty in speech, followed two and a half months later by the death of the patient.

The autopsy showed in the spinal cord an alteration in the ganglionic cells of the anterior horns, most marked in the cervical and dorsal segments of the cord, and an affection of the posterior columns and lateral columns and roots, which varied in intensity in different locations, associated with moderate involvement of the blood-vessels. In the medulla there was found to be degeneration of all the nuclei with the exception of the acusticus, and likewise degeneration of the pyramids. In the right side of the pons was found an area which included the roots of the outgoing facial and trigeminus nerves, and the nucleus of the first was entirely unaffected, while that of the last was destroyed, and this involvement extended sidewise to the pyramidal column of the right side.

The isolated diseased parts were the nucleus of the abducens, the posterior portion of the oculo-motorius nucleus, the posterior longitudinal fasciculus and the left half of the fillet, and a very small portion of the right cerebral peduncle.

In dwelling on the exposition of this case, the author states that it was not possible to consider the symptoms as being dependent upon a focal lesion, as this was eliminated by the manifest change in the condition of the patellar reflex which pointed to a spinal lesion. And the late involvement of lumbar segment of the cord is the explanation of the comparatively late appearance of the loss of knee-reflex.

The article is illustrated by a few woodcuts, which serve admirably to give a proper conception of the lesions and their proper interpretation, especially the one representing a longitudinal section through the pons and medulla. J. C.

ACROMEGALY.

At a meeting of the Medical Society of Lyons, February, 1892, Dr. Bard communicated an observation which he had made relative to acromegaly. The patient's trouble apparently arose from tumefaction and enlargement of the pituitary body which pressed upon the optic chiasma. M. Bard, following out the idea and suggestions of Brown-Sequard, prepared the pituitary glands of a sheep, by maceration in glycerine and then rendering it aseptic, and with this made an injection. He has never had any bad results either from the formation of abscess or from symptoms of poisoning follow; and he prefers an emulsion made from the pituitary either of the sheep or ox. Before practicing the operation he had assured himself that the preparation was innocuous, and then without difficulty received the discouraged patient's consent.

M. Dor, who had seen the case, said it was possible to diagnose compression of the optic chiasma, by the enlarged pituitary, from the fact that the patient had double nasal hemianopsia.—*Lyon Médical,* April 17, 1892.

J. C.

PYORRHŒA ALVEOLARIS, OFTEN DIAGNOSED AS FACIAL NEURALGIA.

C. G. Pease, M.D., D.D.L. (Medical Record, February 13, 1892), calls attention to a number of cases of pyorrhœa alveolaris which have fallen into his hands after having been diagnosed as facial neuralgia and treated for such. The causes given are irritation from calculus, salivary or sanguinary, the latter always a result of degenerative conditions of mucous crypts surrounding the necks of teeth; insoluble dentifrices, mercurials, etc. He also thinks the disease depends upon the existence of a diathesis. These irritants produce an inflammation of the gingivæ, causing them to weep a serous fluid from which a cerumal deposit takes place upon the tooth under the free margin of the gum, acting as an additional irritant. It may be years before serious conditions occur, but finally the peridental membrane becomes destroyed, the alveolar wall absorbed and a pocket formed between the root of the tooth and the gum. The cerumal calculus is deposited as the root is denuded, and so continues the work of destruction to the very apex of the root; the tooth loosens, pus exudes about its neck, and it is finally lost. During the progress of this disease there are periods of severe pain, often lasting weeks or months, frequently augmented by food in the pockets fermenting about the necks of the teeth, making them acutely sensitive. These conditions are frequently overlooked by the dental surgeon, a large number of cases giving no visual evidence to the unpracticed eye of the progressive disease which will prove so disastrous if not properly treated. A. F.

THERAPEUTICAL.

SALOPHEN.

Dr. Josef Fröhlich (Wiener med. Wochen., July, 1892), in an exhaustive treatise on the Therapeutic Application of Salophen, says that in not one out of thirty cases of acute rheumatism did this remedy fail. The pain ceased in from three to four days, and the acute swelling disappeared in six to eight days. Large joint effusions were, however, not influenced. Salophen, like the other salicylic preparations, cannot prevent relapses. In two cases, acute endocarditis appeared during the treatment. The author says that salophen is a prompt and efficient remedy in acute rheumatism, and is to be preferred to the salicylates because (1) being decomposed in the intestine it does not irritate the stomach; (2) it can be given in large doses and for a long period without unpleasant effects, such as loss of appetite, nausea, vertigo or collapse: and (3) it is tasteless. The action of salophen upon chronic articular rheumatism was not constant in some cases, but in others it had good effect, and therefore further experiment is worth undertaking. Salophen has very little action as an antipyretic. In one out of three cases of cystitis, it seemed to be useful. In only three cases were any unpleasant effects produced, and they were but slight.

Salophen is also suggested as an intestinal antiseptic on account of the large quantity of salicylic acid which it contains, but Dr. Fröhlich was unable to determine as to this, as suitable material was not at his disposal for experiment; and, further, he states that he was not acquainted with the action of salophen upon pathogenic and putrefactive bacteria. He adds, however, that it would be advisable to institute experiments in this direction.

ELECTRO- AND SUGGESTION-THERAPY.

Prof. Eulenburg, in a lengthy article on this subject, reviews the work done by the late Frankfort Electro-therapeutic Congress. He finds much to take exception to, when statements to the effect that electricity in itself has no virtue, that its effect is purely a psychic one, are made by men recognized as leaders in this direction. When two such men as Möbius and Müller have diametrically opposed views in regard to the therapeutic action of electricity, what deductions were to be drawn? Möbius in his first writings on the subject says that electricity, applied in organic paralysis, is corrective in its effect, that in paralysis due to destruction of the peripheral nerves, or muscular fibres, electricity certainly hastened regeneration. And that it was only necessary for electricity to be given a fair trial for this fact to be proven. That the influence of electricity on the change in nutrition in the paralyzed part in traumatic paralysis was so evident, that there could be no doubt of its beneficial effect. Other observers were of the same opinion at this time, conclusions having been arrived at after very careful study and experiments, and now for these views to be exploded, and the same authors to conclude that the electricity was a purely psychic one, was remarkable, to say the least. The preponderance of opinion at the late conference was, however, in favor of the suggestion theory.

Prof Eulenburg was of the opinion that electricity was *pièce de résistance* in the treatment of paralysis, and that it was of the greatest value in the diagnosis and prognosis of these conditions. How often in infantile irritative conditions, neuralgias, convulsions, astasia-abasia, neurasthenia, hypochondria, and psychical impotence had electricity been invaluable, acting in some instances as a psychic corrector. It was to this influence that the peddagogical practitioners, applied the term of suggestive medicine, their so doing showing a lack of proper appreciation between cause and effect. Electro-therapy had until now missed having rational scientific foundation upon which to build up a future, but the author thought that this last heated controversy on the subject would incite investigators to push the study so as to be able to draw some definite conclusions from the recorded facts. It was not the author's intention to denounce all contrary views as erroneous, but to ask for a stay of opinions until further investigations be made. Electro-therapy was still sufficiently new for it to be given a longer trial, before it be put on one side as an agent that was only used for psychic effect. Suggestion as a medium for the improvement of paralytic conclusions could hardly be said to offer what scientifically applied electricity did; however, it remained to be seen which would triumph, electro- or suggestion-therapy in this class of cases.—Reprint from *Berliner klin. Wochenschrift*, 1892, No. 8.

B. M.

SURGICAL TREATMENT OF NEURALGIA OF THE FIFTH NERVE.

At a meeting of the Surgical Society, Paris, France, held May 25, 1892, M. Chalot, of Toulouse, reported an interesting case of inveterate neuralgia of the trigeminus cured by operation.

The patient, a man seventy years of age, had long been a sufferer from tic douloureux. The pain extended along the various branches; the superior maxillary, the inferior dental, the auriculo-temporal, and the supra-orbital. All the ordinary therapeutic measures had completely failed.

M. Chalot exposed the infra-orbital nerve at the point of emergence from the infra-orbital foramen.

He then laid bare the malar bone by two incisions—the one vertical, the other horizontal. He sawed through the zygomatic arch with the posterior portion of the malar bone, and reflected it back, exposing the zygomatico-maxillary fossa and the upper part of the pterygo-maxillary fissure. He tied the internal maxillary artery, and easily came upon the superior maxillary nerve, drew it out on a blunt hook, and cut it behind and in front of the spheno-palatine ganglion. This portion of the nerve and the ganglion were then extirpated. M. Chalot then put back in place the osseous segment. This being done, he proceeded to the resection of the infra-orbital nerve which had before been exposed. He then trephined the inferior maxillary bone above the angle of the jaw, found the inferior dental and lingual nerves, which were resected at that level. He then resected the auriculo-temporal nerve after the usual manner.

M. Chalot has found fourteen similar cases in medical journals foreign to France. M. Segoud has published three cases; the results were satisfactory. At the same meeting, M. Segoud stated that he had another neurectomy to add to the three cases which he had previously published. He communicated the results of his operations.

The first patient was afflicted by a return of his pains a year after the operation, and has since committed suicide.

In the second patient, there was no return of the tic douloureux for fifteen months, then the pains came back.

As for the last two, they have been free from their pain for more than a year. E. P. H.

Society Reports.

AMERICAN NEUROLOGICAL ASSOCIATION.

Eighteenth Annual Meeting, held in New York, June 22, 23 and 24, 1892.

The President, DR. C. L. DANA, in the chair; Dr. G. M. HAMMOND, Secretary.

[CONTINUED.]

Dr. F. X. DERCUM read a paper on

THREE CASES OF A HITHERTO UNCLASSIFIED AFFECTION RESEMBLING OBESITY, BUT ASSOCIATED WITH SPECIAL NERVOUS SYMPTOMS, A TROPHONEUROSIS.

DISCUSSION.

Dr. SPITZKA trusted that Dr. Dercum would publish his observations in some widely circulated medical journal.

Dr. MILLS thought it likely that systemic central changes would be found in these cases, probably in the gray matter of the cord, but nearer the central canal than in the cases of neuro-muscular type.

Dr. SPITZKA hoped that no speculations as to the probability of systemic disease, or affections of the central canal would be indulged in.

Dr. DERCUM also read a short paper on

TWO CASES OF ACROMELAGY.

DISCUSSION.

Dr. COLLINS thought that the apophysis cerebri was not found to be enlarged, but only diseased in these cases. If there was any theory which might be perhaps accepted it was that the gland manufactured certain substances from the circulation, and that the changes in the extremities were concomitants of degenerative changes in the smaller twigs of nerve fibre going on with degeneration of the connective tissue.

Dr. SPITZKA said there were two portions of the apophyses cerebri, and he would be glad to know which of them was referred to.

Dr. COLLINS said he referred to that portion known as the pituitary body.

Dr. KELLOGG read a paper entitled

TOXIC ORIGIN OF INSANITY. (See page 742.)

DISCUSSION.

Dr. TOMLINSON said that he had been very much interested in what Dr. Kellogg had said, and heartily agreed with the view as to the influence of toxic causes in the production of insanity. He wanted, however, to call attention to one point not mentioned by the writer of the paper, and that was, that a toxic influence could not produce insanity of itself, but if produced, there must have been a pre-existing instability of the nervous organization. This instability might be hereditary or acquired. The heredity did not necessarily have to be of insanity in parents or near relatives, but the instability might be due to any constitutional condition in the parents acting upon the child, or it be acquired as the result of disease or accident in early life by the individual. Besides he looked upon insanity resulting from the misuse of narcotics and alcohol as manifestations of defective nervous organization exaggerated by the toxic influence these substances had upon the organism. In auto-infection the same conditions must necessarily exist, else why did not auto-infection more often cause insanity?

Dr. BANNISTER said that he perhaps had not fully apprehended Dr. Tomlinson's definition, but he understood him to say that all delusions were due to prior hallucinations. It seemed to him that the delusions of the insane were largely due to the characteristic self-feeling of the insane, and that they might be started by an idea, a wish, or a suspicion, without anything in the nature of a veritable hallucination having preceded them.

Dr. MILLS thought that the subject was one of the most important which could be brought before them. The paper would have the effect of calling for a full consideration of the subject of toxæmia. It was the most promising field now presenting for cultivation by the therapeutists in nervous affections.

Dr. PARSONS thought that the ratio of toxic insanities was not large. Some of the cases, arising from alcohol, drugs, and syphilis, could hardly be regarded as directly of toxic origin.

The PRESIDENT said there was a form of insanity which might be frequently observed, and which had been described as exhaustion insanity. This was toxic insanity which he had observed in connection with peripheral neuritis. In ordinary cases of insanity associated with neuritis, he thought, there must be a toxic agent at bottom.

Book Reviews.

CENTRI TERMICI E CENTRI VASO-MOTORI IN ORDINE ALLA TERMODINAMICA REGOLARIZZATRICE IN CONDIZIONE NORMALI E PATOLOGICHE. Ulteriori Ricerche Sperimentali del Dott. Bartolomeo Baculo, Napoli, 1891.

This volume contains ninety-four pages. The experiments were made in the Pathological Institute of the University of Naples. The temperature was measured by means of the thermopile and the galvanometer. He did not investigate the corpus striatum, as the experiments upon this body are unanimous that its irritation causes elevation of temperature. To injure the brain and at the same time localize the lesion, he used caustics and injections of coloring material. He found that lesion of either the posterior third or median part of the thalamus caused a notable elevation of temperature over the whole body. A greater rise of temperature was noted upon the side of lesion, and especially of the anterior extremity. Lesions of the tubercula, quadrigemina, and especially the nates, caused a general rise of temperature, with a higher temperature upon the side of lesion and in the posterior extremity. Puncture of the thermic cortical centres caused a fall of temperature more marked on the side opposite the lesion. There was no preliminary trepanning in these experiments, and the basal centres of the brain were not involved. The fall of temperature in these experiments lasted some days. Lesions of the lateral ventricles caused a general depression of the temperature. He believes in the localization of thermic centres, and divides them into thermogenic and thermo-inhibitory, the former being at the base of the brain, the latter in the cortex.

He holds that the basilar thermogenic centres act directly upon the tissues and without the intervention of the vaso-motor system.

The cortical inhibitory centres cause a reduction of temperature by a direct action upon the thermogenic centres at the base of the brain. The path of thermic inhibition is different from that of vaso-motor inhibition.

The phenomena of hypothermia and hyperthermia are due to excitation and not to paralysis.

If the cortical centres are more functionally excited than the basal hypothermia ensues; if the basal excitation preponderates then hyperthermia results. The spasm or paralysis of the cutaneous vaso-constrictors does not have any influence upon these phenomena. He concludes his monograph with a theoretical explanation of the phenomena of fever, holding that its temperature-part is dependent upon the nervous system and its thermic centres. ISAAC OTT.

LECTURES ON DISEASES OF THE SPINAL CORD. By Pierre Marie, M.D., Associate Professor of the Faculty of Medicine of Paris. Pp. 504; 244 illustrations. G. Masson, Paris, France, 1892.

This volume contains thirty-eight lectures upon diseases of the spinal cord. The author, from his long hospital experience and his intimate association with the neurological clinics of la Salpêtrière has had ample opportunity for closely studying his subject. A careful perusal of the work shows that each disease has been treated with a thoroughness and attention to detail which leaves little room for unfavorable criticism. And yet, when the reader has turned the final page, he cannot but wonder why the book was ever written.

As a series of lectures to students they are excellent; thoroughly exhaustive, and well expressed. But they contain nothing new, nothing which has not been just as well said for many years. The major part of the volume deals with the anatomy both normal and pathological, and with the symptomatology of the various spinal affections. Tabes dorsalis naturally receives the greatest part of the author's attention. Very nearly half the volume is devoted to the consideration of this disease. The lectures on the Symptomatology and Morbid Anatomy are a complete *résumé* of the subject, and the chapter on Tabetic Arthropathies is one of the most important and interesting features of the work. In regard to the treatment of diseases of the spinal cord the author has but little to say. Whether it is that he feels the hopelessness of any efforts directed against organic disease, or whether he considers that the treatment of disease is of minor importance compared to the pathology and morbid anatomy, it is difficult to say. In either event the reader is not likely to obtain much information which can be put to practical use in controlling the manifestations of disease.

One point of interest in the etiology of spinal affections is the author's firm belief in the theory of infection in some instances, and particularly in the causation of multiple sclerosis. He considers it quite possible that that disease may be absolutely arrested by the use of some substance similar to the vaccine of Pasteur or the lymph of Koch, but does not tell us what that substance is.

The numerous illustrations which adorn the work capitally serve their purpose.

As a whole, the book is a good one. In regard to matters of fact it is correct according to the present state of our knowledge. But it is merely a reiteration in the author's own language of what has been written many times before. G. M. H.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. Edited by Chas. E. Sajous, M.D., and seventy associate editors. Five volumes. The F. A. Davis Co., publishers. 1892.

The Annual of the Universal Medical Sciences for 1892 comes to us earlier this year and all the more welcomingly. The perusal of this reference book gives no end of interest and instruction. As we examine the work the conviction grows stronger that while in other fields of medicine advancement takes place and much is done in the way of valuable communications to journals and in books, that something is lacking in the special field of neurology. There seems to be an apology on the part of all the reviewers in this department for the "very little that has been done."

Still, if one cons this section, new ideas and new impressions are made.

Without a good work like this Annual Review how hard it would be to keep apace with advancing thought in medical science in all her various directions and in all the languages of the world. It is held by the student and active worker that the digest and review portions of our medical journals are the most valuable, and the importance and value of a journal depends to a greater extent upon this characteristic than any other.

The Annual of the Universal Medical Sciences is as careful and complete as it can be. It is undoubtedly of incalculable value to thousands of workers. It may not be perfect, but it is as yet the best Annual Review and Digest of Medical Sciences in the world.

NOTICES.

"ELIXIR THREE CHLORIDES."

The combination so named is growing in popularity, and it is such a good preparation and so well made that substitution is hardly to be tolerated; so we voice an expressed sentiment of "Renz & Henry," that when writing for it that their preparation be specified R. & H.'s

PRIZE ESSAYS: ON THE ACTION OF ALCOHOL AND ITS VALUE IN DISEASE.

The American Medical Temperance Association, through the kindness of J. H. Kellogg, M.D., of Battle Creek, Mich., offers the following prizes:

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These essays must be sent to the Secretary of the Committee, Dr. Crothers, Hartford, Conn., on or before May 1, 1893. They should be in type writing, with the author's name, in a sealed envelope, with motto to distinguish it. The report of the committee will be announced at the annual meeting at Milwaukee, Wis., in June, 1893, and the successful essays read.

These essays will be the property of the Association, and will be published at the discretion of the committee. All essays are to be scientific, and without restrictions as to length, and limited to physicians of this country.

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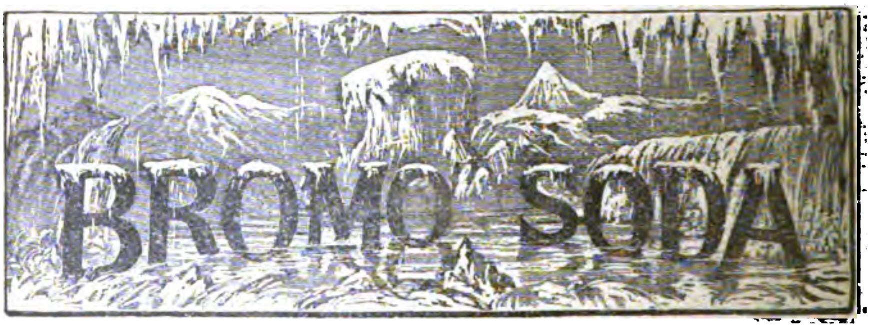

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A MONTHLY PERIODICAL

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NOVEMBER, 1892.

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Note Relative to the Buffalo Lithia Water.

WILLIAM A. HAMMOND, M.D., Washington, D. C.

Surgeon-General U. S. Army (retired), formerly Professor of Diseases of the Mind and Nervous System in the University of New York, etc.

There is a point in relation to the therapeutical efficacy of the Buffalo Lithia Water which has not as yet, I think, received sufficient attention. It is well known that many cases of diseases of the nervous system are complicated with lithæmia, and that unless this condition is removed a cure is very often retarded and not infrequently entirely prevented. It is quite commonly the case that in cerebral congestion producing insomnia, nervous prostration resulting from over-mental work or much emotional disturbance, and in epilepsy (to say nothing of many cases of insanity) an excess of uric acid in the blood is often observed. This state appears to be altogether independent of the character of the food, for no matter how careful the physician may be in regard to the diet of his patient the lithæmic condition continues. I have tried to overcome this persistence by the use of phosphate of ammonia and other so-called solvents for uric acid, but without notable effect.

Several years ago, however, I began to treat such cases with Buffalo Lithia Water, with a result that was as astonishing to me as it was beneficial to the patient, so that now in all cases of nervous diseases under my charge, in which there is an excess of uric acid in the blood, I use the Buffalo Lithia Water in large quantities. By this I mean that I do not have the patient drink merely a tumbler or two in the course of the day, but that I flood him, so to speak, with the water, making him drink a gallon or even more, in the twenty-four hours. By this course the urine after a few days ceases to deposit uric acid crystals on standing, the morbid irritability of the patient disappears, the tongue becomes clean, the wandering pains in the head are abolished, and the system is rendered much more amenable to the special treatment which may be necessary for the cure of the disease from which the patient suffers.

I have tried carbonate of lithia dissolved in water in various proportions, but it certainly does not, in cases to which I refer, have the same effect as Buffalo Lithia Water.

WASHINGTON, D. C., January 25, 1892.

UNIVERSITY OF MARYLAND—SCHOOL OF MEDICINE
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DR. WM. T. HOWARD,

Professor of Diseases of Women and Children in the University of Maryland, says:

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All the Affections Peculiar to Women

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VOL. XVII. November, 1892. No. 11.

THE
Journal
OF
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Original Articles.

SEXUAL HYPOCHONDRIASIS AND PERVERSION OF THE GENESIC INSTINCT.[1]

By IRVING C. ROSSE, A.M., M.D.F.R.G.S.,
Professor of Nervous Diseases, Georgetown University, Washington, D. C.

IN the remarks that are to follow, an attempt will be made to avoid the superannuated subjects of spermatorrhœa and venereal excesses now relegated to quacks and the advertisements of religious newspapers, and I shall not touch upon any teratological condition of the genital organs, nor upon the high degrees of sexual excitement so often found among the insane.

The manœuvers of either sex to produce the venereal orgasm independently of the conditions of normal coitus, and known comprehensively as genital abuse, merit the scientific study of the psychiatrist and neurologist, owing to the prevalence and spread of sexual crime and the fact that legal medicine calls for clearer knowledge upon this point.

Among the long series of manifestations alleged to follow such abuse none is more frequently observed than that of psychic depression. Numerous cases of melancholia, hypochondriasis and sexual neurasthenia, attributable to artificial provocation of the genital erethism, are met with among the sexes by the general practitioner both in town and country, and of all hypochondriacs those who refer their suffering to the genital organs are perhaps the most miserable.

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[1] Read at a meeting of the Medical Society of Virginia, at Alleghany Springs, September 13, 14 and 15, 1892.

At the outset it may as well be said that in no other class of affections is a diagnosis by exclusion more to be relied upon; for the affection in question may be dependent upon some other cause entirely different, as difficult dentition, worms, too rapid growth, or to similar phenomena that may accompany the slow and insidious course of chronic affections of the viscera. So common also in this regard is the confusion of cause and effect that many unthinking persons attribute nearly all cases of insanity to genital abuse, just as I have often heard an old attendant do when showing visitors about the insane wards of Bellevue Hospital. This matter of mistaking symptoms for causes, especially in misapprehending the erotic manifestations of insanity, has, however, been so well put by Sir James Paget in his admirable essay on sexual hypochondriasis that further attempt at elucidation on my part would be to go over ground already well trodden; and what I could say relatively to the ætiology would be in the way of concurrent testimony that would only strengthen the doubt as to whether excesses of the sexual system can altogether originate the affection. I shall therefore limit myself to the brief mention of a few particulars that have come under professional observation, as by so doing I observe the Newtonian injunction of example rather than precept, and this too in the face of a petulant remark that I overheard from an older member of the profession, at a late meeting, to the effect that he would as lief have a man spit in his face as to begin reading cases. I am quite safe in the assertion that none of us in either this or the next generation is likely to have the pleasure of contributing to the monument that shall commemorate what he has done to promote medical science.

Without, however, going into details of the old *morbus Mirachiali*, I may refer to several concrete illustrations of pathological states where the patients themselves believed their moral trouble and intellectual disorder to be the consequence of onanistic habits. Among many of the kind I recall five typical cases in young unmarried men, all of whom were impotent and neurasthenic, and each confessed to the long-continued habit of procuring *extra vas* ejaculations. In one case the salacious fury often led to the erethism being provoked as much as five times before midnight. The mental symptoms in these cases rather touched the border line; one of them had a homocidal, two a suicidal impulse; or, more correctly speaking, the fear of an impulse. Two had agoraphobic symptoms, and one has since married. Symptoms of this kind are not limited to single men. Two syphilophobes that I have lately treated are married men, one of whom is the saddest example of this form of hypochondria that I have ever seen outside of an asylum. Another hypochondriac, an intelligent lawyer from one of the Western States, for a number of years had abusive genital relations with his wife, which had reduced him to the moral and physical condition best described by the clinical picture so often seen in quack advertisements. This patient is the only one of the class in which I was able to detect spermatozoids in the urine.

If such crimes of sexuality were confined to men the lesbian habits of the opposite sex would furnish no material for comment. In the cases of mental depression in unmarried women that I have had under observation erotocism was at least one of the syndromata. One of them, called to my attention by Dr. Jos. Tabor Johnson, of Washington, was a comely young woman who suffered from nymphomania, practiced genital abuse to excess, and declared that several persons, among them her clergyman, had cohabited with her. The nervosism in this case was exaggerated to such extent that the mere sight of a man, even the attending physician, suggested a repetition of the act to provoke the venereal spasm. So persistent was the habit, that on tying her hands the act was accomplished with her heel. To prevent this the feet were secured, but she succeeded in bringing about an orgasm by pressing the thighs together in such a way as to excite the clitoris. Operative interference was suggested in this case, which developed into erotomania, and the patient died at a retreat near Philadelphia.

Perhaps the most that can be said of such cases as the foregoing is that the majority of them will yield to judicious treatment. As a matter of fact, much of the so-called sexual hypochondriasis is in no way attributable to sexual criminality. But the uncleanness forbidden by God and despised by man calls at the present time for more earnest attention from the physician, since it concerns not only personal and public hygiene, but forensic medicine, and the consequent welfare of family and posterity. The moral point of view does not concern us as physicians, but bodily and intellectual welfare coming pre-eminently within our province, the inference is obvious even to the lay mind.

In a late sermon of the Archbishop of Canterbury before the Medical Association at Birmingham the medical profession were reproached with a want of courage and candor in dealing with the whole question of "purity," so-called. I have no doubt we merit the censure, as many of our members, actuated by virginal modesty and false delicacy, shrink from exposing the turpitude that they constantly meet with. Medical men are clearly the only persons qualified to give trustworthy information in regard to sexual matters, and there is no other subject that comes within the daily range of the physician upon which people are more anxious to be correctly informed. As a factor in social evolution the question of the reproductive function is therefore of burning importance both in its normal and abnormal manifestation.

If crimes of sexuality were confined to the human species, we should not have an opportunity to study the biological beginnings of crime as observed in curious instances of criminality in animals, which raises doubts as to whether these inversions of the genesic instinct are with them unnatural phenomena or rather an outward manifestation of an imperious functional want. Without exposing the details of the analogy upon which is founded the presumption, we are warranted in saying that as many of the lower beings in the zoölogical scale show virtues having analogy to those of man, we must expect to find parallel vices. It is an error to suppose that aberration of the genesic instinct is confined to our species, time or race. Evidence shows that unnatural crime exists under all latitudes. It extends from the prehistoric times of the troglodytes up to Hippocrates, who stigmatizes it in his oath, and from his time to the present. I have observed common instances of sexual perversion in dogs and turkeys. A short time since, at the Washington races, a celebrated stallion was the favorite on whom the largest bets were made. A friend of mine, having ascertained from the groom the day before the race that the horse had procured an ejaculation by flapping his penis against the abdomen, accordingly risked his pile on another horse, who, by the way, came in ahead. Only a few days ago, to escape a shower, I took refuge in the elephant house in the Washington Zoölogical Gardens, where are confined the two male elephants, "Dunk" and "Gold Dust." To my astonishment, they entwined their probosces together in a caressing way; each had simultaneous erection of the penis, and the act was finished by one animal opening and allowing the other to tickle the roof of his mouth with his proboscis, after the manner of the *oscula more Columbino*, mentioned, by the way, in some of the old theological writings, and prohibited by the rules of at least one Christian denomination.

It would be easy to cite other instances like these, which may be suggestive from a Malthusian point of view, as we know that the female spider often kills and eats the amorous male; female birds will combine to drive away the male, and other analogous facts have been noticed in various species. Whatever we may say of animals in this respect, the facts of zoölogy tend to support rather than antagonize our moral code. It is rather in the matter of *bestiality* that sodomitical intercourse with animals requires mention. This high treason against humanity, mentioned in the Bible from Moses to St. Paul, has perhaps existed from all time, as numerous citations from both sacred and profane literature go to show. In antiquity there were the sacred ram of Egypt; the serpents kept in the temple of Æsculapius, and the donkeys mentioned by Juvenal (Sat. vi. 332, 333), so much sought after by women who recognized the salacity of an animal that promised the most voluptuousness to hysterical insatiety. A quotation from Plutarch would seem to show that animal and individual relations of a culpable nature were widespread in the Latin empire; and from histories of the middle age we glean that the vice was more dominant than in antiquity. Soldiers in those days satisfied their passions on anything, mules, hogs, sheep or fowls; and on the march, among the camp followers, were richly caparisoned goats kept for the use of officers and their friends.

It is not, therefore, astonishing that the frequency of the evil should have attracted the attention of theologians. In the fifteenth and sixteenth centuries a favorite theme for sermons was sodomy and bestiality, as one will see who cares to run through the sermons of Jean D'Aquilæ, Savonarola, Cherubino di Spoleta, and others, not to mention the monstrous details to be found in the work *De Matrimonio*, by Father Sanchez. Nor is it surprising that the question of unnatural fornication came up between confessor and penitent; that the matter should be mentioned in the *Regulæ Communes* (xxxiv.) of the Jesuits, and that penal sanction should be attached to bestial sin committed by a member of the clergy:

"Item episcopus cum quadrupede peccans decem annos pæniteat, presbyter quinque, diaconus tres, clericus duos."

It is very easy to hurl an anathema at another century and to say that such an epoch carries off the palm for corruption. In our day this crime is happily less prevalent, though far from rare in the large cities, although Dr. Pouillet says that in France there are but few villages where the degradation does not exist among the inhabitants, and that cases of this kind are far from rare in the courts of justice. Those of us who have been students abroad, and have done the slums of large cities, can recall a performance between a woman and a donkey which was to be witnessed on paying a small sum. A similar show, in which a large Newfoundland dog and a prostitute were the actors, could be seen some years ago in San Francisco. On questioning the passive agent regarding this form of salaciousness, she averred that if a woman once copulated with a dog she would ever thereafter prefer this animal to a man. The much maligned Chinaman, who has the reputation of having reached the highest refinement of lubricity, is said to have such a partiality for ducks, that Europeans in China will not eat a duck on this account. As a race problem, however, I do not think that what a writer calls "the fetichism of love" is more observable in the Mongolian than in the Caucasian. My observation of such matters in the Chinese quarter of San Francisco leads to the belief that the French prostitutes of *Dupont* Street can give them points any time. Doubtless from an ethnic point of view there is a difference in the erotic constitution, and an Anglo-Saxon may not be capable of so much salaciousness as a Turk, an Arab, or a negro.

I know the case of a negro boy and a cow, which was well known in a suburb of Washington, and came under the observation of a medical practitioner and others. On the other hand, just a year ago, a young white unmarried woman in the Capitol City was surprised *in flagrante delicto* with a large English mastiff, who, in his endeavors to get loose, caused an injury of such a nature that the woman died from hemorrhage in about an hour. Besides the medical observance of this case it was a matter of police knowledge, and elicited the comment that the men in the neighborhood could not be very enterprising.

Among other genital idiosyncrasies of negroes coming to the knowledge of the Washington police, is the old Scythian malady spoken of by Hippocrates and Herodotus, and observed by contemporary travelers in the Caucasus. A band of negro men, with all the androgynous characteristics of the malady, was sometime since raided by the police. The same race, a few years ago, had one or more gangs that practiced a kind of phallic worship. An informant, who has made a study of skatological rites among lower races, described to me how a big buck, with turgescent penis, decorated with gaily colored ribbons, stood and allowed his comrades to caress and even osculate the member. Performances of the same nature are known to the rites of vadouism. In New Orleans, a few years ago, a vadoux society was suddenly surprised by the police during these ceremonies. Two of the naked persons taking part in the orgy were white women. The incident led to a famous trial, which resulted in acquittal.

It is doubtful whether observations such as these go to support the statement that in the progress of humanity lubricity and civilization march hand in hand, since travelers have noticed that many facts to the contrary exist among primitive people, especially our North American Indians. Having spent two seasons among the Eskimo, of Bering Strait, I have reason to believe, from circumstances not necessary to detail, that inversions of the genesic instinct exist among these people just as they do among our common humanity in other latitudes. The sodomitical habit to which I refer, known as *pederasty*, is one of the oldest infamies of the Adamic race. Biblical and classical writings show the spread of a vice that could not be arrested by the voice of the apostle, the edicts of magistrates, nor the penalties attached thereto by the Casuists. The historical development of this subject would form a long chapter of curious but repugnant reading. The worship of Baal was only a masculine prostitution, which is also mentioned in the Koran, and history informs us that Phillip himself was soiled by this infamy; that Cæsar was "the husband of all women and the wife of all men," and Nero, Alcibiades, and Adrian were adicted to this passion. Even Horace in the latter part of his career had an attachment of the kind, and one of the poems of Vergil, which so many of us read as schoolboys, is full of pederastic allusions. From historical citations we could easily sketch the spread of pederastic prostitution in other epochs, especially about the fifteenth century, when religious mysticism and genesic insanity assumed monstrous proportions, or we might refer to the geographical distribution, which shows a greater prevalence in Asiatic countries. But it is with the present that I wish to deal.

Rectal coitus between men and women is so prevalent in Paris, says Dr. Pouillet, that out of every hundred prostitutes admitted to the Lourcine sixty at least have undergone rectal defloration.

The concert of the two prostitutions, feminine and pederastic, in many of the foreign cities is a fact known to many. Only a short time ago a notorious place of the kind in New York, known as the "Slide," was broken up by the authorities, mainly through the publicity given to it by the *New York Herald.* From several prosecuting attorneys of the larger cities I learn the details of many cases, and there has come to my knowledge an instance of a religious hypocrite, a man living in a small village, who ruined a number of boys, three of whom died and one of whom committed suicide. A similar case, known to the police of Washington, is that of a well-connected man with a very pallid complexion, who enticed messenger boys to a hotel, and after getting them under the influence of drink accomplished his fell purpose. A friend in the Department of Justice tells me of the trial in Philadelphia of a noted pederast who communicated syphilis to a dozen or more of his victims. Some years ago I saw at San Francisco, on board the celebrated Arctic cruiser *Corwin* a case of syphilitic periostitis in a ward-room boy, who had been shipped by the executive officer without medical inspection. Being too young to have acquired venereal disease in the ordinary way, examination revealed the existence of a horrible mass of syphilitic sores about the anus and nates. The boy told me that previous to his shipping on the *Corwin*, he had served on board the U. S. S. *Alaska*, where men had used him as a passive agent for immoral purposes. My friend Dr. Dickson, U. S. Navy, calls my attention to a similar case that he has just observed in an apprentice boy of fourteen at the Washington Marine Barracks.

The presence of chancres having been observed in other parts of the body, as the mammæ, the axilla, and even the mouth, calls for the consideration of a hideous act that marks the last abjection of vice. So squeamish are some English-speaking people on this point that they have no terms to designate the "nameless crime" that moves in the dark. Many of the Continental writers, however, make no attempt to hide the matter under a symbolic veil, and deal with it in terms as naked and unequivocal as those used by the old historians, from whom hundreds of citations might be made, and this too without incurring the reproach of pedantry. A quotation from Erasmus shows that *lesbianism* had a place in his thoughts. "Aiunt turpitudinem quæ per os peragitur, fellationis opinor vel irrumationis, primum a Lesbiis authoribus fuisee profectam."

The writings of the Casuists, so profoundly versed in matters of conscience and human vice, show unequivocally the same thing, as witnessed in the questions recommended to spiritual directors, especially those of Bishop Burchard, of Worms, in the eleventh century; and some ecclesiastical writers even went so far as to express the opinion that they saw no mortal sin in the action of "virile membrum in os mulieribus immittere," or in that of "virile membrum in os accipere."

From writings of the genitalists I might multiply references like these to a tiresome length; but to be brief, it may be said that inversions of the genesic instinct have and do exist among all people, and that numerous cases may be collated from current medical literature, and from the archives of criminal anthropology and penal science. A contemporaneous French writer says that "the fire and sulphur that destroyed Sodom and Gomorrah would scarcely satisfy to purify New Caledonia." And Dr. Pouillet writes of buccal coitus that *irrumation*[1] has become so habitual (*chez nous*) among the French that there are but few young men of this generation upon whom it has not been practiced, and but few compliant women or prostitutes who refuse to fill the office of *fellatrice*.[2]

As a reflex of this state of immorality we have only to call to mind the unclean realism of Zola and Tolstoi, and the French lesbian novels, *Mademoiselle Giraud ma Femme*, by A. Belot, and *Mademoiselle de Maupin*, by Th. Gautier, whose point of departure is tribadism. The same astounding theme pervades *Fridolin's heimliche Ehe*, by Wildebrand; *Brick und Breck odor Licht in Schatten*, by Count Emerick Stadior, and *Venus im Polz*, by Sacher-Masoch. In our own country the surreptitious sale of such publications is carried to such an extent that agents of the Post Office Department yearly destroy tons of pornographic literature.

That these degrading acts tend to spread more and more in the great centres of population, we have only to recall what some of us have seen in the old cities of Europe, where certain women will commit the simulacrum of the virile venereal act for a small sum of money; where infamous scandals have occupied the attention of justice and the newspapers, and have even caused the expulsion of a member of Parliament. A vice that crossed the Atlantic with Columbus and perhaps with the austere virtues of the *Mayflower*, like other spreading things in our country, has caused club scandal and a lawsuit in New York, and extending to San Francisco and far away New Zealand, like the morning drum-beat of the greatest nation, has begirdled the earth.

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[1] These terms not being Englished the following definitions are given: *Irrumare:* penem in os arrigere.

[2] *Fellatrix* dicitur ea quæ vel labris vel lingua perfricandi atque exsugendi officium peni præstat.

But let us come nearer home and turn on the search light in our own city. I trust I am not indiscreet in repeating a remark, overheard lately among a group of gentlemen of Latin extraction, one of whom on averring that he could never bring himself in lesbian relation with a woman, was evidently looked upon by the others in a pitying way as a man whose education had been neglected.

A Washington physician, whom I see almost daily, tells me of a case of venereal disease of the buccal cavity in an old soldier whom he is treating. The patient with unblushing effrontery did not hesitate to say how it was contracted.

From a judge of the District police court I learn that frequent delinquents of this kind have been taken by the police in the very commission of the crime, and that owing to defective penal legislation on the subject he is obliged to try such cases as assaults or indecent exposure. The lieutenant in charge of my district, calling on me a few weeks ago for medical information on this point, informs me that men of this class give him far more trouble than the prostitutes. Only of late the chief of police tells me that his men have made, under the very shadow of the White House, eighteen arrests in Lafayette Square alone (a place by the way, frequented by Guiteau) in which the culprits were taken in *flagrante delicto*. Both white and black were represented among these moral hermaphrodites, but the majority of them were negroes.

Another instance that has come to my knowledge is that of a sanctimonious young man who frequented a certain religious association in order to entice victims of this singular genital abuse.

But men do not by any means hold a monopoly in this kind of perversion. Years ago, by way of investigation, I began a collection of quack advertisements and pornographic literature, which was soon dropped, as the result was neither elevating nor profitable. At that time I did not believe in the existence of some of the very things that I have mentioned, but having had a neurotic patient whose conversation showed an extremely erotic turn of mind, I learned from her some particulars as to the existence and spread of saphism.

I know the case of a prostitue who from curiosity visited several women that make a specialty of the vice, and on submitting herself by way of experiment to the lingual and oral manœuvers of the performance, had a violent hystero-cataleptic attack from which she was a long time in recovering.

Through one of my patients of the opposite sex another case has come to my knowledge of a woman who practices the orgies of tribadism with other women after getting them under the influence of drink.

The professor of obstetrics in Columbia College, Dr. A. F. A. King, tells me of a case of tribadism coming under his observation in which a young unmarried woman became pregnant through her married sister, who committed the simulacrum of the male act on her just after copulating with her husband.

I am aware that the instances herewith adduced fall short in number and detail when compared with those reported by some French, Italian and German writers, notably Moll, whose late work *Die Conträre Sexuel Empfindung*, Berlin, 1891, goes into the subject with Teutonic thoroughness.

Having purposely avoided citing the cases of others, I have confined myself to those coming within personal knowledge and observation; and I take it for granted that what is true of Washington as regards sexual matters applies more or less to other American large cities.

Having shown that humanity is obliged to live with such moral maladies as I have attempted to portray, I fancy some critical person will remark, why bring to the light of publicity the details of such a repugnant subject? The answer to this lies in the startling clinical facts just exposed, which show that the question of sexual perversion is one of social hygiene touching mental pathology in many points. There is consequently a call for better understanding by physicians and lawyers as to specific acts, since they may be consulted to pass upon the mental state and responsibility of an individual and to determine whether a certain act is the result of an unsound mind or merely one of a libidinous nature. Morbid love between two young women, one of whom murders the other, may be cited. Such a case was tried on the Eastern Shore of Maryland a few years ago. The recent case of Alice Mitchell is still another in point.

We fight anarchy, nihilism and cholera, why not take measures to prevent, stay and root out acts that attack both general and individual health, menace physical vitality, and destroy intellectual and moral essence?

This brings up several important practical questions as to causes, prohibitory and repressive measures, and the like. It has been suggested that the subjects of genesic inversion may be victims of an anomaly, analogous to that of splanchnic inversion. Whatever may be the cerebral blot or abnormality of the genito-spinal area that brings about this physiological instability, there is at the present time a subtile and powerful influence in corrupt and immoral publications, indecent advertisements, and newspaper articles, printed and pictorial, which tends, by concentrating the thoughts on the lower portion of the genital tract, to bring about much sexual depravity. The erotic effect of reading publications of the kind may affect the lower lumbar reflexes in such a way as to cause great anxiety and bring about sexual hypochondriasis, not to mention the fact of their influence as wide disseminators of immorality and as teachers of crime.

The Saphic literature that is yearly vomited forth by the Continental printers has recently caused the railway book-stalls in Belgium to be closed. In English-speaking countries, societies for the prevention of vice have brought many of these human vampires of the printing press to the attention of justice. Cases in point are the well-known action against Bradlaw & Besant for publishing "The Fruits of Philosophy," and the recent prosecution of Messrs. Vizetelly for publishing "Nana." Notwithstanding the "Indecent Advertisement Act" passed in England, failure to convict is the rule in such cases. It is probable that no thoroughly effective legislation will ever be brought about, and that such indecent publications as "The Elements of Social Science;" quack advertisements entitled "Health, Vigor and Manhood," and the outrageous reports and meretricious illustrations of newspapers will continue to appear in countries where speech is free and the liberty of the press unrestricted.

The Assistant Postmaster-General, Mr. Lowrie Bell, tells me that so much obscene matter comes to the Dead Letter Office that he is obliged to prohibit women clerks from opening the mail. Agents of the Depredation Bureau and of certain societies capture and destroy much of this stuff; but many of the methods of societies for preventing vice and bringing about prohibitory legistion, though well meant, are both reprehensible and impracticable. Over-zeal has led to false philosophy and sophistry like that of the prohibitionists, who would enact sumptuary laws that would interfere with the liberty of the subject. Drink has never destroyed a nation, but luxury and unbridled lust have many times; and nowhere does the Bible say "Thou shalt not drink," although it is throughout particularly severe on all the sinful lusts of the flesh. So imperious is the prompting of the generative instinct that any legislation or other measure looking to its control or repression would be about as ineffectual as an attempt to change some of the great physical wonders of the North American continent.

What then should be done in the treatment of cases guilty of unnatural and immoral practices? Clearly, it is a matter of prevention and judicious education with the employment of appropriate medical and surgical measures, and such hygienic, social, and psychic rules that any intelligent physician can suggest.

At no time of life is psychic hygiene of more importance than toward the epoch of puberty, and this is best enforced by the sedulous cultivation of the function of self-control. The key-note of most cases of insanity being defective inhibition, common sense would suggest that young people of all classes be accordingly instructed as far as possible. As an adjuvant to the accomplishment of self-restraint nothing is better than gymnastic and athletic training. It is for this reason that I am such a strenuous advocate of the manly exercises and out-door sports, especially those that bring the play impulse into action. Daily excessive muscular expenditure carried to the point of lassitude is a powerful and constant derivative to genesic irritability. It moreover strengthens the will and gives energy to resist the startling and suggestive impressions of an imagination gone astray. A verification of this fact is often found in champion athletes, many of whom are temporarily impotent. To be sure we do not want to make Hanlons and Corbetts or record breakers of our boys, but who would not rather have his son contract a bad heart or a hernia than to see him a sexual pervert?

In some of the schools in England instruction and advice is given to boys regarding sexual matters. Professor Humphrey, of Cambridge, advocates instruction of this kind along with an appeal to a boy's manliness and honor; and at the request of a majority of undergraduates an anonymous pamphlet has been placed on the table of the Union, explaining sexual physiology and giving authoritative and rational advice. I am not aware that such matters receive attention at the large schools of our country, unless it be the Roman Catholic colleges, where they are a part of religious supervision.

But the religious instinct so often goes astray in this respect as to impress all philosophers and all physicians with the narrow border line that separates religious exaltation and erotic perversion. Many hypochondriacs pass for religious when they are only suffering from sexual neurasthenia; and it is a fact known to physicians that so-called religion and erotic debauchery often go together. For this reason, I am always suspicious of young women who object to round dances on moral grounds, as I know of a number of cases of the kind, who, to put it mildly, "went to church before the bell rang." Much of the New England prudishness; the affected propriety of such places as Asbury Park; the late salvation performance of *De Cobain* in Brooklyn, and the colossal modesty of some New York policemen, who, in such cases, want to give written rather than verbal testimony, each and all come within the category of hypocrites, that strain at a gnat and swallow a camel. I have known this sentiment carried to such an extent in a Massachusetts small town, that a shopkeeper was obliged to drape a small but innocent statuette displayed in his window.

I cannot better conclude these remarks than by advocating the teaching to youth a virtuous and judicious carelessness about sexual matters. I am not one to take a pessimistic view of the anomalies and inversions of the sexual instinct as found among us at the present day. They are manifest disturbances of a badly-balanced nervous system, which we cannot view with serene indifference. Although we may not share the belief of a preacher, who speaks of unbridled lust as the great danger that threatens America to-day, it may be well to bear in mind the results of Roman impudicity, more cruel than the sword, according to the energetic expression of Juvenal, and that more recent admonition found in two lines of the *Deserted Village*:

> "Ill fares the land to hastening ills a prey,
> Where wealth accumulates and men decay."

THE FREQUENCY OF RENAL DISEASE AMONG THE INSANE.

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IN the hope of obtaining some statistical facts regarding the prevalence of renal disease among the insane, and of ascertaining the general status, among American alienists, of the "Bright's Disease and Insanity" question, I recently asked of the superintendents of a number of insane hospitals in the United States, brief replies to the interrogatories which, together with the answers received, are given in condensed tabular form below. Some of the institutions addressed avowed an inability to return even approximate statements, and are of necessity omitted from the table. The replies are numbered and names withheld. (See pages 813 and 814.)

So far as indicating the frequency of disease of the kidneys is concerned, the figures reported are, with a few exceptions, of manifestly little value, owing to the want of systematic observation and the very general neglect of the chief diagnostic means at our disposal for the detection of this disease. However, a not unimportant lesson may be gathered therefrom by those who read between the lines and compare, for instance, the results obtained at two large hospitals in the same State, one reporting (No. 10 in table) that urinary examinations are made in every case at time of admission; that in "at least one-half" of these albumen and casts are discovered; and that of the nine hundred patients under treatment "probably one-half" exhibit a nephritic complication of some kind, the other institution (No. 29) resorting to urinalysis in suspected cases only and making the statement that among an insane population of more than eight hundred not one case of renal disease is

TABLE I.

	Number of patients under treatment?	Number (or approximation thereto) known to be suffering from "Bright's Disease" in any of its forms?	Is the urine of every patient examined at time of admission? If so, in what proportion is evidence (albumen and casts) of a nephritic complication found?	Do you recognize a causal relation between renal disease and mental alienation?	What form of insanity is, in your experience, most often associated with Bright's Disease?
1	262	Three.	No.	A not infrequent coincidence, but not a distinctly causual relation.	Have met with it in various forms of insanity.
2	1350	A small proportion.	No.	Yes.	Melancholia.
3	150	None.	No.	Have had no cases where history indicated such relation.	
4	658	None.	No.	No.	Am unprepared to say.
5	184	Very few; probably five.	Urine examined; albuminuria rarely found.	No; both conditions have common cause.	General paralysis.
6	264	Ten per cent.	No; unless some indication of renal weakness.	Yes.	Melancholia, stuporous insanity and dementia.
7	264	None.	Only when mental trouble is suspected.	I do not.	Have no experience.
8	367	None.	Urine is not examined unless some symptoms indicate disease of kidneys or bladder.	I have not as yet.	
9	40	None.	Test is usually made, but not in every case.	I have not.	
10	926	Probably one half.	Yes. Albumen and casts in at least one half.	Yes.	Melancholia.
11	845	Four.	No. Examination only made to verify diagnosis when sugar or albumen is suspected.	Do not.	Melancholia.
12	212	None.	No. Unless some indication.	Yes.	
13	70	None.	Only suspicious cases examined.	Yes.	Melancholia.
14	520	Probably three.	No.	I have thought so.	I have observed both mania and melancholia.
15	431	One.	Not examined in absence of symptoms suggesting renal disease.	In some cases.	No uniformity, in my experience.
16	240	None.	No.	No.	
17	862	Five or six.	Only when symptoms suggest the possibility of nephritic trouble.	Yes.	Various forms of melancholia, also certain forms of brain degeneration dependent upon vascular changes.
18	878	Five.	Only when nephritis is suspected.	Not any more than any other bodily disease.	Dementia.

TABLE I.—(*Continued.*)

	Number of patients under treatment?	Number or (approximation thereto) known to be suffering from "Bright's Disease" in any of its forms?	Is the urine of every patient examined at time of admission? If so, in what proportion is evidence (albumen and casts) of a nephritic complication found?	Do you recognize a causal relation between renal disease and mental alienation?	What form of insanity is, in your experience, most often associated with Bright's Disease?
19	435	None.	Many, but not all.	Sometimes; more often mal-nutrition of tissue produces disease of kidneys.	Acute delirious mania. Disease of kidneys common at autopsies of insane.
20	370	None.	No.	Have not noticed it.	I do not know.
21	10	None.	No. Unless indicated.	No.	No especial form.
22	340	None.	No; only when disease is suspected.	No.	
23	433	Six.	No.	Yes.	Mania of a delirious type—active delusions.
24	622	None.	No.		No cases of apparent relation have come under my observation.
25	1926	About one hundred.	No.	No.	No especial form observed.
26	600(?)	None.	No.	No.	
27	1600	Post-mortem examinations show some renal disease in a majority of cases.	No.	No.	I do not know that nephritis is diagnostic of any special form of insanity, or that there is any necessary connection between them.
28	989	Acute nephritis rare; chronic renal disease common.	No.	Mental alienation in these cases almost invariably due, as is the renal disease, to the degenerative changes in the arteries.	Those forms due to atheromatous degeneration of the arteries.
29	810	None.	Only when disease of the kidney is suspected.	No.	Have not seen enough to enable me to decide.
30	756	Two.	No.	Have seen none.	No especial form.
31	1048	None.	Where disease is suspected.		
32	875	Four.	No.	Not certainly.	Have no opinion.
33	841	About one per cent.	No.	In some instances.	With acute nephritis, acute confusional insanity, with chronic renal disease, chronic or recurrent mania, melancholia, and secondary dementia.
34	275	None.	No.	Have no opinion.	
35	240	Seven.	Yes. About six per cent.	Only as a predisposing cause.	Undecided.
36	332	Probably six.	Is not.	Yes.	Different forms.
37	165	One.	No.	Have noted no relation.	Dementia.
38	383	None.	No.	No.	
39	266	None.	No.		

known. For an explanation of the discrepancy one has not far to seek.

Every recent writer who has made any study of the subject—especially to be mentioned, Dr. E. A. Christian,[1] at the Eastern Michigan Hospital, Dr. Alice Bennett,[2] of Norristown, and Dr. G. T. Tuttle,[3] of the McLean Asylum—has reached the conclusion that "Bright's disease" is very common among the insane, and is in some cases directly responsible for the perverted brain action. Though much has been accomplished by these workers it is still evident that the matter is not receiving at the hands of the medical corps of our institutions for the treatment of the insane that attention which its far-reaching importance would seem to merit.

Prior to the time of systematic autopsies with consequent exposure of diagnostic errors, and the routine examination of the urine in every case received for treatment, whether renal disease was suspected or not, the state of the question at the Alabama Insane Hospital was much as shown by the above table. We resorted to urinalysis when indicated—which was rarely—we recognized the well-marked and typical cases of nephritis only, and for some years treated headaches, "dyspepsia," diarrhœa, insomnia, general mal-nutrition, etc., in serene ignorance of the real source of the trouble. We regarded renal disease of any kind as rare among insane populations, and found ample confirmation of this erroneous opinion in every text-book accessible to us. Our views have undergone a radical change, and I feel justified in emphasizing the statement that disease of the kidney is far and away the most common phase of physical weakness to be found within the walls of our institution. Of the eleven hundred patients under treatment, surely one-half present indubitable evidence of a renal lesion. About 60 per cent. of the recent admissions show casts and albumen, and of these 60 per cent. the immense majority give such additional confirmatory evidence as fully warrants their classification under some one of the various forms of the "Morbus Brightii." Quite three-fourths of those who die exhibit at least a complicating degree of nephritic disease, with demonstrable anatomical changes.

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[1] Chronic Bright's Disease in its Relations to Insanity: Journal of American Medical Association, March 23, 1889.

[2] Insanity as a Symptom of Bright's Disease: Alienist and Neurologist, October, 1890.

[3] Kidney Disease and Insanity: American Journal of Insanity, April, 1892.

In the subjoined table are given the results, as to presence of albumen and casts, of the first examination of the urine in 1,034 insane patients. In view of the high percentage of disease indicated, and the somewhat different results obtained by other investigators, I will briefly state that the tests for albumen employed have been:

1° Heat and nitric acid, Tyson's method.
2° Picric acid, in form of "Esbach's solution."
3° Heller's cold acid test (contact).
4° Acetic acid—ferrocyanide of potassium.
5° Robert's nitric-magnesian fluid (contact).

Used with all due precaution in every case. In no instance has a diagnosis of albumen been made from a single test. Most generally three of the above have been used. No distinction has been drawn between serum-albumen and the other proteid bodies—globulin, albumose, etc.—precipitated by thc tests enumerated. In a majority of the cases glucose, indican and acetone have been looked for, and, in some, quantitative estimates of the urea, phosphates, chlorides, etc., made, but these having no bearing upon the subject immediately in hand are omitted from the table, as is also any mention of the sedimentary constituents other than renal casts. (See page 817.)

As stated, the figures are based upon results of the first examination only. In a large percentage of the cases, however, the analysis has been repeated, and about one-half of the patients have been under continuous observation, urinary examinations being made at intervals and, in especial cases, a daily record kept. The outcome of such subsequent examinations has been an increase in the number of those showing both casts and albumen, the non-appearance of one or both of these constituents at a second analysis being more than overbalanced by constant additions from among those patients in whom the first test proved negative in whole or in part. In a certain number of cases of "contracted kidney," the finding of casts, even with the most painstaking search, is the exception, and some of these—patients in whom the constitutional symptoms, with the pale urine of low specific gravity and largely increased quantity are markedly present—are included among those showing either no albumen and no casts, or albumen alone. The question of the significance of albumen and casts arises in this connection, but cannot be discussed at length within the limits of this paper. No one will, I suppose, contend that these abnormal products are thrown off from normal kidneys, and the generally accepted belief that the constant presence of albumen and casts in the urine is *prima facie* evidence of disease finds confirmation in the fact that the great majority—all, I may say, with very few exceptions—of our patients exhibiting the urinary signs show such other symptoms

TABLE II.—SHOWING OCCURRENCE OF ALBUMEN AND CASTS IN THE URINE OF 1,034 INSANE PATIENTS.

		WHITE.		COLORED.	
	TOTAL.	MEN.	WOMEN.	MEN.	WOMEN.
Both casts and albumen found. .	561	204	229	56	72
Casts found; no albumen	121	48	40	24	9
Albumen found; no casts	200	80	78	13	29
Neither casts nor albumen found.	152	53	38	29	32
Total number of examinations. .	1034	385	385	122	142

as amply confirm the diagnosis. It is interesting to note that the percentage of disease indicated is somewhat smaller among the negroes than among the white patients, and that the women of both races, contrary to the opinion expressed by most writers, exhibit an amount of renal weakness visibly in excess of that found in the opposite sex. A certain proportion of the cases of nephritis we have had on our wards have been acute in character, progressing to recovery, death, or ending in a chronic lesion, but by far the larger number have pursued a typically chronic course from the time they came under notice. Among these chronic forms those associated with arterial degenerative change seem especially frequent, though all the varieties of kidney disease find their representatives among our cases.

The appended statement of the condition of the kidneys at twenty-five consecutive necropsies will suffice to show in a general way the frequency of characteristic structural alterations, and serve as evidence corroborative of the opinion, above expressed, that fully one-half of the cases of insanity coming under observation have a complicating renal lesion. The examination has on every occasion been made as soon as practicable after death, with the purpose of measurably eliminating those changes in the epithelial cells due to decomposition. For microscopic study sections of both kidneys have been used in each and every case, though the organs are spoken of as one, unless there exists a marked structural difference on the two sides. The hardening agents employed have been Müller's fluid (potassium bichromate), Fleming's fluid (osmic acid), and in some instances dilute alcohol. Cutting and staining by the usual methods.

CASE I.—Negro, man, æt. 70; senility, with maniacal excitements; died in stupor.

Autopsy.—Cerebral atrophy; small tubercular nodules in apex of left lung; liver and spleen firm and small; heart weighs 5¾ ozs. Kidneys: Soft, red; capsule adherent; cortex thinned; medullary rays obscured; some of the pyramids very pale; weight of right 2½, of left 2¾ ozs. Microscopical examination: Uniform thickening of capsule; patches and bands of interstitial thickening and round-cell infiltration numerous and large; thickening of Bowman's capsule and afferent vessels; thickening of walls of all the arteries, intima particularly involved; epithelial cells show some disintegration and granular cloudiness; many tubules contain casts (hyaline).

Case II.—Female, white, æt. 40; insane ten years; melancholia, passing into dementia; tuberculosis pulmonum, and no symptoms of renal weakness save œdema of feet for a short period some months before death; the urine generally contained no albumen, but a few hyaline and faintly granular casts were the rule.

Autopsy.—Cerebral atrophy; tuberculosis of lungs and tubercular ulcers in small intestine; weight of heart 6⅜ ozs. Kidneys: Capsule non-adherent and gross appearance approximately normal; weight of right 3½, of left 4 ozs. Microscopical examination: Epithelial cells in some of the convoluted tubes are granular and swollen; a little *débris* and a few casts in situ; no further change.

Case III.—Male, white, æt. 74; senile dementia; death preceded by apopletic symptoms.

Autopsy.—Cerebral atrophy; extensive subdural hemorrhage. Heart: Brown atrophy; weight 6¼ ozs.; arterial sclerosis well marked. Kidneys: Capsule slightly adherent; numerous cysts in the thinned cortex; striæ obscured; weight of right 2¾, of left 3 ozs. Microscopic examination: Localized thickening of the capsule, extensive patches of interstitial thickening, capsules of a few tufts thickened, afferent vessels thickened, large hyaline casts in situ, and cloudy swelling and some disintegration of epithelial cells.

Case IV.—Female, white, æt. 62; opium habit thirty-two years, with gradual impairment of intelligence; for several years presented a rather typical case of chronic nephritis with œdema, gastro-intestinal disorder, etc. Death preceded by somnolence, gradually deeping into coma; urine contained much albumen and great numbers of casts—hyaline, granular, nucleated and fatty.

Autopsy.—Œdema of brain, lungs, cellular tissue, chronic pericarditis, chronic endocarditis (mitral and aortic valves involved), chronic diffuse endarteritis (atheroma of cerebral arteries); weight of heart 10¾ ozs.; fatty infiltration of liver. Kidneys: Firm, pale; capsule readily removed, but leaves an extremely irregular, knobby surface; cortex pale yellow; striæ obscured; pyramids dark red; right weighs 4½, left 4⅛ ozs. Miscrocopical examination: Extensive patches of intertubular thickening with destruction of Malpighian tufts in same area; walls of all arteries thickened; epithelial cells much broken down, granular, swollen, many tubules choked with *débris*, and some contain casts in situ.

Case V.—Female, white, æt. 50; epileptic convulsions for twenty-seven years, and during the latter half of this time dementia with periods of excitement; chronic nephritis, terminating in somnolence, coma and death, urine contained albumen, hyaline and granular casts; and was usually increased in quantity.

Autopsy.—No disease save that of kidneys. These organs are soft and pale, the capsule adheres in places and remaining surface is granular. Cortex is thinned, and its markings are indistinct. Pyramids dark, striated. Right weighs 4¼, left 4½ ozs. Microscopical examination: Patches of intertubular thickening and round cell infiltration. Total destruction of many Malpighian tufts, and general thickening of capsules of those remaining. Secreting cells granular and broken; some tubules almost denuded of epithelial lining. With iodine and gentian violet a slight amyloid reaction is obtained in some tufts and around some of the blood-vessels.

Case VI.—Negro woman, æt. 37; chronic melancholia with delusions; died of tuberculosis. No nephritic symptoms. Urine contained a trace of albumen and some hyaline and faintly granular casts.

Autopsy.—Tuberculosis of lungs, pleural, small intestine, lymph glands, liver, spleen and uterus. Kidneys: Pale, soft; capsule non-adherent; cortical tissue thinned; medullary rays obscured; pyramids dark, striated. Weight of right 4⅛, of left 4 ozs. Microscopical examination: "Cloudy swelling" of glandular epithelium. Vessels, tufts and intertubular tissue normal. A few casts in the tubules. No tubercular nodules discovered.

Case VII.—Female, colored, æt. 44. Insane many years, and much demented. Had a chronic nephritis. Urine contained albumen and casts—hyaline, waxy, fatty, granular. Somnolence and stupor preceding death.

Autopsy.—Cerebral atrophy. Bodily organs normal, save the kidneys, which are soft, dark; have partially adherent capsules, and a much thinned cortex. Striæ indistinctly visible. Pyramids very dark. Weight of right 5, of left 4¾ ozs. Microscopical examination: Capsule shows localized thickenings. Small areas of intertubular hyperplasia and round-celled infiltration. Slight thickening of arterial walls. Tubal epithelium shows a high degree of degenerative change, and is broken down and converted into cast matter in many tubules. Casts in situ very numerous.

CASE VIII.—Female, white, æt. 28. Insane ten years—melancholia with delusions, passing into dementia. Tuberculosis pulmonum, with, in later stages, œdema of face and lower extremities. Urine contained albumen and hyaline and granular casts.

Autopsy.—Tubercular disease of lungs and small intestine. Chronic adhesive pericarditis. Weight of heart 7¼ ozs. Kidneys: Capsule does not adhere. Cortex is pale, its striations obscured. Pyramids dark. A small cyst in right. Weight of right 4, of left 4½ ozs. Microscopical examination: There is granular swelling and disintegration of the epithelial cells, of mild degree. *Débris* and casts in some tubules. Interstitial tissue, blood-vessels and tufts unaffected.

CASE IX.—Male, white, æt. 32. Insane three years—melancholia, ending in dementia. Tuberculosis pulmonum, with well-marked nephritic symptoms during late stage. Urine contained albumen, and many hyaline, nucleated, granular, fatty and epithelial casts.

Autopsy.—Tuberculosis of lungs. Tubercular ulcers in small intestine. Weight of heart 8½ ozs. Kidneys: Capsule non-adherent. Cortex pale yellow, its striæ invisible. Pyramids dark red. Weight of right 5⅜, of left 6⅛ ozs. Microscopical examination: A high grade of parenchymatous degeneration, with much *débris*, and casts in situ. No further lesion.

CASE IX.—Female, white, æt. 34. Acute melancholia, with delirium of seven weeks' duration, following severe bodily injury, with traumatic pneumonia. Urine contained a small amount of albumen and some hyaline and faintly granular casts. Death preceded by somnolence and coma.

Autopsy.—Cerebral congestion. Lower lobe of one lung consolidated. Weight of heart 8½ ozs. Kidneys: Capsule non-adherent, cortex pale, striæ visible, pyramids dark—cyst in right. Weight of each 6¼ ozs. Microscopical examination: Granular swelling and disintegration of tubal epithelium. Proliferation of endothelial cells lining Bowman's capsule. Fat globules, *débris* and many casts in tubules. No interstitial thickening, and no disease of vessels.

CASE XI. — Female colored, æt. 36; melancholia eighteen months; tuberculosis pulmonum, with, toward the end, nephritic symptoms.

Autopsy.—Tuberculosis of lungs, pleuræ, peritonæum, intestines, lymph nodes, liver and spleen. Kidneys: Capsule non-adherent, cut surface pale, granular; cortical striæ invisible; weight of right 5, of left 4⅞ ozs. Microscopic examination: A slight degree of intertubular round-cell infiltration; the walls of some of the blood-vessels show slight thickening; tufts are normal; epithelial cells are granular and swollen; in some tubules disintegrated and lumen choked with *débris* and casts; no tubercular disease discovered.

CASE XII.—Male, white, æt. 57; epileptic demetia; stupor for several days before death.

Autopsy.—Cerebral congestion, tuberculosis of lungs (a few scattered nodules); weight of heart 13⅝ ozs. Kidneys: Capsule non-adherent, striæ visible, and general appearance of the organs that of comparative health. Microscopical examination: Intense congestion of blood-vessels, these, even to the smallest, being distinctly shown thoroughout the organ by means of the contained mass of corpuscles, most marked in left kidney; epithelial cells granular, and in a few tubes disintegrating; some casts in the tubules; no further abnormality.

CASE XIII.—Negro, man, æt. 29; epileptic dementia, with occasional excitement, often stupid for days at a time; convulsions and coma preceded death (possibly uræmic); urine contained, on the day of his death, albumen, red blood cells and enormous numbers of hyaline, granular, fatty and nucleated casts.

Autopsy.—Cerebral congestion; weight of heart 8¼ ozs. Kidneys: Dark, firm; capsule adherent; cortex reddish brown, its striæ invisible; pyramids also dark-colored; much blood exudes; right weighs 5, left 5½ ozs. Miscroscopic examination: A high degree of cellular disinteration; most of the tubules containing only shapeless masses of granular matter and casts; proliferation of cells lining Bowman's capsule; other structures fairly normal; the left kidney shows the change described in a greater degree than the right.

CASE XIV.—Negro, man, æt. 46; mania one year; œdema and gastro-intestinal symptoms well marked; somnolence and stupor preceding death.

Autopsy.—Cerebral atrophy; weight of heart 8¾ ozs. Kidneys: Soft; capsule adherent; cortex dark red, granular; its striæ invisible in left, faintly seen in right; small areas of round-celled infiltration are found upon microscopical examination, as also thickening of arterial walls, and a slight granular swelling of tubal epithelium; some of the tufts and a few small arteries give an amyloid reaction; weight of right 3¾, of left 3⅛ ozs.

CASE XV.—Male, white, æt. 34; insane ten years; epileptic dementia with periods of maniacal excitement; somnolence and stupor preceded death; urine contained albumen, and hyaline and waxy casts; quantity varied.

Autopsy.—Cerebral congestion; heart 8¼ ozs. Kidneys: Firm, dark red; capsule adherent; cortex thinned; its markings invisible; right weighs 3¾, left 4⅛ ozs. Microscopical examination: Areas of intertubular thickening and round-celled infiltration; walls of a few arteries and a few Malpighian tufts give an amyloid reaction, as do some of the casts in tubules; degenerative change in epithelial cells inconspicuous.

CASE XVI.—Female, white, æt. 33; epileptic since infancy, and intellectually deficient; had occasional œdema of face and the gastric disorder, diarrhœa, etc., of chronic nephritis; urine contained albumen, hyaline, granular, nucleated and, in later stages, epithelial casts; quantity varied greatly.

Autopsy.—No gross lesion of interest save that of kidneys; these organs are firm and dark-colored; capsule adheres throughout, and leaves a typically granular surface; cortex shows an apparent thickening; is dark red in color, granular, and its markings very indistinct; blood oozes freely from cut surface; weight of right 5½, of left 6¼ ozs. Microscopical examination: Cloudiness, swelling and some disintegration of tubal cells; casts and *débris* in the tubes; proliferation of the cells lining Bowman's capsule, with thickening of the walls of some tufts; little or no interstitial change.

CASE XVII.—Female, white, æt. 52; melancholia, with persecutory delusions, noise and irritability for four years; died two weeks after an attack of la grippe, with marked uræmic symptoms; urine was diminished in quantity and contained albumen and many casts, dark brown, coarsely granular ones especially numerous; the tubercular disease was not recognized during life.

Autopsy.—Cerebral atrophy; a few small tubercular nodules scattered through both lungs; a general endarteritis, the atheromatous disease in cerebral vessels well marked, weight of heart 6⅞ ozs. Kidneys: Capsule adheres; cortex is dark reddish-brown; its striæ invisible; the pyramids are pale; a small one-eighth inch in diameter tubercular spot in left; right weighs 4⅛, left 4½, ozs. Microscopical examination: Uniform thickening of capsule; numerous and extensive areas of round-celled infiltration and intertubular thickening; walls of arteries thickened, extreme degenerative change in glandular epithelium; lumen of tubules choked with *débris;* numerous and large casts in situ.

CASE XVIII.—Male, white, æt. 22; insane two years; acute melancholia, with great exhaustion and emaciation; died a few days after admission; no examination of urine; symptoms of bodily disease indefinite.

Autopsy showed all organs, kidneys included, approximately normal in gross appearance. Microscopical examination of kidneys: Uniform thickening of capsule, and a well-defined parenchymatous degeneration; vessels and interstitial tissue unaffected.

CASE XIX.—Female, negro, æt. 47; demented many years, tuberculosis pulmonum, with few if any symptoms of renal disease beyond the presence of albumen and casts in the urine.

Autopsy.—Tuberculosis of lungs, intestines, and a tubercular peritonitis. Kidneys: Capsule very slightly adherent; cortex pale; striæ indistinct; pyramids dark; weight of right 3½, of left 3¼ ozs. Microscopic examination: Capsule shows localized thickening; some intertubular thickening, and distinct thickening of all the coats of the smaller arteries; masses of desquamated epithelial cells in some tubules, and a good deal of disintegration and granular swelling of nearly all the cells in convoluted tubes; here and there a slight amyloid reaction is obtained.

CASE XX.—Male, white, æt. 55; recurring maniacal attacks during several years, ending in dementia; died of septicæmia; urine was of low specific gravity, and increased in quantity, but usually contained no albumen and no casts.

Autopsy.—Cerebral atrophy; slight arterial sclerosis; metastatic abscesses in lungs; fatty infiltration of liver; heart 7 ozs. Kindeys: Pale, firm; capsule non-adherent; cortex shows numerous pale, homogeneous semi-transparent spots; between these it is granular, and striæ are obscured; small cyst in left; right weighs 3½, left 4¼ ozs. Microscopical examination: Numerous areas of round-celled infiltration, increase in number of nuclei in Malpighian coils. Outer coats of arteries are thickened; there are extensive regions of amyloid degeneration; tubal epithelium granular and swollen; but there is little breaking down, and no *débris* or casts are found.

CASE XXI.—Female, white, æt. 19; chronic melancholia of three years' duration; tuberculosis pulmonum; with, during last four months, great œdema of face and lower extremities; urine contained albumen and large numbers of hyaline and granular casts; quantity varied, but was usually diminished.

Autopsy.—Tubercular disease of lungs; small intestine and lymph nodes; fatty infiltration of liver; weight of heart 4¾ ozs. Kidneys: Capsule non-adherent; cortex pale yellow, with which the dark red pyramids and striæ are in brilliant contrast; weight of right 3¼, of left 3⅝ ozs. Microscopical examination: Tubal epithelium swollen, granular, disintegrating; cast matter in many tubules; the lesion is purely parenchymatous.

CASE XXII.—Female, white, æt. 63; chronic melancholia with dementia, twelve years; tuberculosis pulmonum, with œdema and other symptoms of a renal complication; urine was increased in quantity and contained albumen and many casts.

Autopsy.—Cerebral atrophy, tuberculosis of lungs, and tubercular ulcers in small intestine; a general endarteritis chronica; weight of heart 5½ ozs. Kidneys: Pale, soft; capsule locally adherent; cortex thinned, pale; striæ invisible; pyramids also pale and small; weight of right 3¼; of left 4¼ ozs. Microscopical examination: Thickening of intertubular tissue and capsule; many Malpighian tufts destroyed, and some thickening of the walls of all; casts and *débris* in the tubules, and a slight granular and disintegrative change in the epithelial cells; walls of all arteries thickened, the intima most conspicuously affected.

Case XXIII.—Female, white, æt. 27; insane eight years; melancholia with persecutory delusions, and periods of depression progressing to dementia; tuberculosis pulmonum with symptoms of a kidney complication; urine was diminished in quantity, and contained a small amount of albumen with some hyaline and granular casts.

Autopsy.—Cerebral atrophy, tubercular disease of lungs and intestinal tract, with fatty infiltration of liver. Kidneys: Pale, firm; capsule adherent; cortex thinned; its striæ obscured; weight of right 3, of left 3¼ ozs. Microscopical examination: Thickening of capsule; intertubular round-celled infiltration and connective tissue hyperplasia; thickening of capsules of Malpighian tufts; a slight degree of parenchymatous change in tubal epithelium, most distinct in left kidney; some *débris* and cast matter in a few tubules; blood-vessels unaffected.

Case XXIV.—White, female, æt. 67; demented thirty-seven years; had a chronic nephritis, with occasional slight œdema; death preceded by stupor of two days' duration.

Autopsy.—Atrophy of brain; first stage of pneumonia in lower lobe of one lung; a general endarteritis chronica, cerebral arteries participating; weight of heart 7 ozs. Kidneys: Capsule adherent, leaving a highly granular exterior after removal; cortex dark red and granular; its markings obscured; each organ weighs 4½ ozs. Microscopical examination: Great thickening of capsule; a high degree of round-cell infiltration and intertubular thickening; many Malpighian tufts destroyed, and distinct thickening of capsules of those remaining; tubal epithelium swollen and granular, and in some tubules broken down and converted into irregular masses of *débris;* hyaline casts in situ, some of which exhibit an amyloid reaction, as do also a few of the Malpighian coils and walls of some of the smaller arteries; all arterial walls are more or less thickened, the intima being the seat of most extreme change.

CASE XXV.—Male, colored, æt. 27; secondary paranoia of two years' duration; three epileptiform convulsions six months before death (uræmic?); tuberculosis pulmonum; urine contained albumen and hyaline and granular casts.

Autopsy.—Tuberculosis of lungs; slight arterio-sclerosis. Kidneys: Capsule adherent, and leaves a very granular, uneven surface after removal; cortex dark, its striæ faintly visible and somewhat tortuous; weight of right 3½, of left 4½ ozs. Microscopical examination: Extensive intertubular thickening; some Malpighian tufts destroyed; walls of the smaller arteries thickened, the outer coats as well as the intima; cloudy swelling and slight disintegration of the tubal epithelium; *débris* and cast matter in some tubules.

Of the above twenty-five examinations not one can be said to show a strictly normal kidney; but it is to be doubted if the histologically perfect kidney can be found in any person dying after middle life, and nephritis of mild degree is a so constant accompaniment of acute disease that especial importance cannot attach to slight intertubular thickening and the milder grades of parenchymatous metamorphosis. It will be readily seen, however, that approximately three out of four of the kidneys examined show serious and extensive disease. The study has been continued through about one hundred autopsies, with results of which the above cases may be taken as a fair synopsis.

The question of the relation between insanity and renal inadequacy is one of paramount importance, toward the solution of which the discovery of the frequent co-existence of the two conditions is but a single step. Assuming that the manifestations of mind, be they normal or abnormal, are dependent upon cell activity, and that cell activity is modified by cell environment, a natural and necessary connection between the two is so apparent as to render useless any extended discussion of this point. It follows that the circulation in the blood of deleterious agents of whatever source and nature, as well as the abstraction from the blood of any of the ingredients essential to normal nutrition is inevitably succeeded by perversion or diminution of cell activity, the outward visible sign of such perversion or diminution in case of the cells of the cortex cerebri being a lowering of intellectual capacity more or less pronounced, or derangement of normal mental balance. Any pathological process possessing the potency of renal disease in inducing tissue mal-nutrition would exert an equal influence in the genesis of mental aberration; but when the supreme importance of the kidney as an organ of elimination is considered it will be readily seen that its diseased states are most especially liable to be followed by contamination of the nutritive current. It seems to me not improbable that the psychic manifestations of other maladies—the fevers, tuberculosis, etc.—are due in part at least to retention of the products of disease and tissue waste by reason of failure on the part of the kidneys to perform their full duty.

That disease of the kidney is the primary lesion in the cases showing mental alienation as a symptom cannot in many instances be proven. In some at least the renal disease and cerebral disorder are concurrent effects of a common cause; and in the arterio-sclerotic forms disease of the cerebral arteries enters as a complicating factor. It nevertheless appears reasonable to suppose that however caused, whenever fully established and whatever its nature, the existence of nephritic disease with consequent interference with the function of the gland cannot but exert an at least modifying influence upon the mental state of the individual.

The general impression among those who have studied the subject is that insanity accompanying disease of the kidney is prone to assume the form of melancholia, and this I am not prepared to dispute. It has been suggested[4] that in an organism predisposed by inheritance to a ready derangement of the intellectual faculties, disease of rapid onset tends to induce as a result of this action upon the cortical cells some form of maniacal excitement, whereas pathological process of slow and insidious development are apt to be accompanied by a depressive neurosis. If this opinion be accepted as even partially true, the great preponderance of chronic nephritis affords a rational explanation of the frequency of melancholia in such cases. It is to be borne in mind, however, that it is not in melancholia alone that renal disease is found. It is frequent in acute maniacal excitement, and well-nigh universal in puerperal, opium and alcoholic cases, whatever form the mental symptoms assume.

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[4] Dr. J. Batty Tuke, in British Medical Journal, May 30, 1891.

It was my intention in the beginning to give in detail such cases of interest as the material at hand should offer, but their number has grown so large, and the necessity for observation during long periods so apparent, that I shall content myself with directing attention to this very promising field of clinical research, and reserve the further discussion of the subject should the results of continued study seem to warrant this course, for a future report.

NOTE ON THE CONNECTION WITH NERVE CELLS OF THE VASO-MOTOR NERVES FOR THE FEET.

J. N. Langley (Journal of Physiology, Vol. xii., No. 4, 1891). The chief conclusion in this note is that studies on dogs an cats show the vaso-constrictor, vaso-dilator and the secretory fibres for a given region to be associated with nerve-cells in the same ganglia. This gives us an anatomical grouping which is certainly correlated with the association of these physiological processes.

H. H. D.

A CASE OF PSEUDO-HYPERTROPHIC PARALYSIS WITH PECULIAR MOVEMENTS OF THE UPPER EXTREMITIES.[1]

BY E. C. SPITZKA, M.D.

THE patient, L. S., whose photograph taken shortly after the time I examined him, was seen by me in a small city on the Rhode Island frontier of Massachusetts in 1881. It is unnecessary to state that his attitude and appearance is characteristic of that form of pseudo-hypertrophic paralysis in which the atrophy of the arms markedly antedates wasting in the lower extremities. It was this patient whose actions first called my attention to the peculiar movement (class of movements rather) which I have since been able to collate. Whether dressed or undressed, under examination and observation or not, he had a habit with his right hand—thumb and fingers flexed, the index finger but slightly so—of making a sudden motion toward the nose, such as certain persons in the lower walks of life are apt to indulge in when sniffing; at the same time there was a straightening out in his attitude as if all the muscles involved in maintaining the erect posture were associated in the act. A peculiar expression, which at this remote date I find it difficult to describe, crossed his face, his head and eyes being turned toward the approaching finger.

The family, one of culture, refinement, and wealth, were averse, as we often find it, to the unearthing of any family history. I had completed my examination of the child, as far as the physical signs were concerned, before this symptom had been sufficiently evidenced to attract my attention; when I remarked it, the discovery was associated with the fact that the child had certain imperative conceptions and fear of going under a certain tree, a terror of a Newfoundland dog, at the later hours of the day whom at others he showed a great affection for; he also had a terror of the stairs, and even on the ground-floor of the house, expressed in his childish way an impression as of a yawning precipice.

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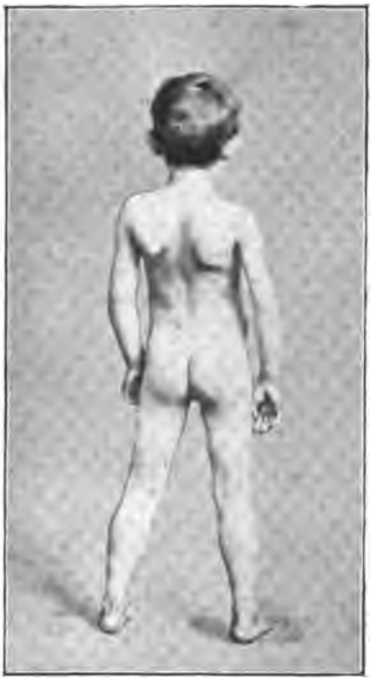
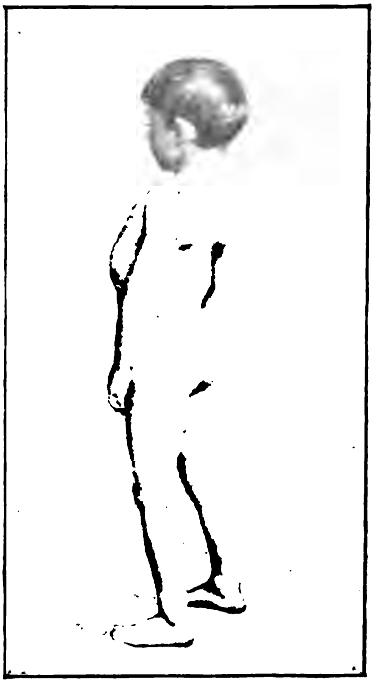
[1] Read at the meeting of the American Neurological Association, at New York, June 22, 23 and 24, 1892.



On discussing these symptoms, the father having left the room to order the conveyance which was to take me to my railroad station, the mother informed me that there were three members of her husband's family in insane asylums in the immediate neighborhood: a brother, sister, and first cousin; and that the grandfather of the patient had died in a well-known institution in the neighboring State. The form of mental disorder, as far as the lay statement, hurriedly made, permits me to judge, was paranoia, tinctured with primary deterioration. In the case of the uncle of the patient, as in that of the first cousin of his father, it had been remarked that exactly the same motion had been habitual, and became constant and marked during the asylum sojourn. It should be added that the father showed a slight ataxia in the hands sufficiently marked to be recognized by himself; up to 1889, the date at which my knowledge of this case ends; the father had showed no further symptoms. The child progressed, as these cases usually do, developed a more marked grade of imperative conceptions and morbid fears, and a slight grade of imbecility. Like most patients suffering from what was at that period called "spinal disorder," the child had been circumcised, I need not add: without the slightest benefit.



Since then I have seen four other patients, whose histories I shall not read in detail, in whom similar strange automatic movements were noticeable; in two cases they were bilateral, limited to the arms; in the third, associated with salaam movements of the head and neck; in the fourth there was a predominant effort to make a "hop-skip-and-jump" action, if I might so designate so clumsily performed a motion. As the patient walked, there was a long step on the right side followed by two on the other. This fourth case is the only one in which I might have been in doubt as to the interpretation of the symptoms, were it not for the fact of the family history, which, as in the entire series, is a bad one.

In a case not included in the above series, I had the good fortune to observe the patient at a period at which we seldom have an opportunity of seeing such patients, viz., adult life. He had studied theology and had become an ordained minister, but, becoming paranoiac, was seen by me in an institution for the treatment of mental disorders. He had a motion strongly resembling that of the first patient, greater, however, as regards the turning of the head and neck. The index finger alone was raised and slightly curved, and the patient would suddenly start at the rate of two or three times a minute, imitating a motion which one would make in saying, "I hear a noise there." He had a fixed hallucination of sound, and located it exactly six inches in an accurately defined direction from the right parietal boss. This had no relation, which I could elicit,[2] with his paranoia as far as could be ascertained. He was an intelligent patient, and himself realized in his relatively lucid moments that it was unreal; he never associated it with his delusional ideas, but claimed that he had this condition from childhood. He died of diarrhœa.

In this case we obtained an autopsy. In 1879 the methods of examining the central nerve structures were not as advanced as now, and to my great surprise I found no signs of any structural disease whatever, either in the cord or brain. I found a heterotopia parallel to the claustrum at the region corresponding to the posterior slope of the Island of Riel on the left side, also some peculiarities of the gyri, which I then regarded as abnormal. They were assymmetrical and atypical.[3]

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[2] It may be conceived that every means at my disposal was resorted to, in order to establish a connection of so suggestive a character.

THE BODY WEIGHT IN MENTAL DISEASES.

Fürstner, of Strassburg, bases his conclusions upon observations running through several years. He divides his patients into three classes.

1. Individuals with fully developed brains which were normal up to the appearance of the pychosis. In these there sets in, with the initial period, a reduction of the body weight. This is independent of faulty ingestion of food and the motor excitement. When the disease is progressing toward recovery, the weight increases, even if the patients are still in a state of motor excitement. This relation is especially true in acute mania, and rarer in melancholia.

2. In patients who are hereditarily disposed, or who have been through several attacks, their weight first sinks and then oscillates, until it finally becomes constant.

3. In patients suffering from diseases having an organic base, the body weight undergoes great variations. This is especially true of paralysis and periodic psychoses. For example, a patient suffering from a periodic psychosis, lost, before the period of excitement had set in and while the appetite was good, six pounds in the course of twenty-four hours, and sixteen pounds in the subsequent seven days. A loss of four pounds a day and ten to twelve pounds in four to five days is quite usual. This indicates the important influence of the central nervous system upon metabolism. The writer states that he has observed, in patients with brain tumors, a continuous and sinking of the body weight.—*Deutsches Archiv f. klinische Medizin*, Bd. 46. F. H. P.

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[3] I have preserved the drawings of both hemispheres and the left occipital lobe itself. The details are more properly related in connection with another publication now in preparation.

A CASE OF SYRINGOMYELIA.

By WILLIAM C. KRAUSS, M.D.,

Buffalo, N. Y.

UPON the invitation of your secretary to read a paper before this Section, the thought occurred to me to report a case of a disease as yet seldom met with in America, although its symptomatology, pathology and diagnosis seem to be well established. To convince one that syringomyelia is more prevalent in Europe than in America, one need but glance at the literature collected by Blocq,[1] or that of Buhl,[2] or even that of Bäumler,[3] and compare the American with the European references. The cases reported by American authors, as far as I can learn, are those of Starr,[4] Upson,[5] Van Gieson,[6] Booth,[7] Jeffries,[8] Wehlau,[9] Shaw,[10] Church, Hawley, Vought,[11] Abbe and Coley.[12]

Whether this disease is actually as uncommon as reports seem to indicate, or whether it has been overlooked and placed in the category of those affections which it so closely resembles, is a question to be solved in the future. To be sure its symptomatology is so intimately allied with progressive muscular atrophy, the first stages of amyotrophic lateral sclerosis, Morvan's disease, anæsthetic leprosy, some forms of hysteria, etc., that a most thorough examination is necessary before it can be detected. On the other hand, whereas all symptoms may point toward syringomyelia, yet cases are on record where the autopsy revealed an altogether different lesion. It is, therefore, a rather difficult affection to diagnose, and once diagnosed, it is still more difficult to have the diagnosis verified or certified to by the pathologist.

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[1] Gazette des Hôpitaux, Dec. 7, 1889.

[2] Archiv f. gen. de Méd., July 1, 1889.

[3] Deutsch. Archiv. f. klin. Med., B. xl., p. 443, 1886.

[4] Am. Journal of Medical Sciences, May, 1888, p. 457.

[5] New York Medical Journal, 1889, p. 238.

[6] Journal of Nervous and Mental Disease, July, 1889, p. 393.

[7] New York Medical Record, 1888, p. 236.

[8] Journal of Nervous and Mental Disease, Sept., 1890, p. 568.

[9] New York Medical Record, Dec. 12, 1891, p. 704.

[10] New York Medical Journal, 1890, vol. ii., p. 613.

[11] New York Medical Journal. Nov. 21, 1891.

[12] Journal of Nervous and Mental Disease, July, 1892, p. 512.

It is not my intention to enter into a careful review of the symptomatology and pathology of syringomyelia, for I trust you are all acquainted with these facts,[13] I only wish to report a case and the manner in which I arrived at my diagnosis.

D. J. M., age thirty years; height, 5 feet 7½ inches; weight 140 pounds; complexion dark; constitution large, robust, well developed; habits steady, regular, avoiding all excesses.

Antecedents.—His grandparents died of old age. His father died of cancer of the stomach, aged fifty-two. His mother, still living, enjoys good health. He has four brothers and one sister living, and likewise healthy.

Early History.—He passed through infancy and adolescence without any serious difficulty save an attack of syphilis which he contracted when nineteen years old. Slight secondary symptoms appeared, which under antisyphilitic treatment disappeared, without any later manifestations. At school he was bright and intelligent, interested himself in sports, and was considered in strength and agility the peer of his comrades.

When twenty years old, then living in Chicago, he went on the lakes as wheelman. Shortly afterward he took to railroading, serving in various capacities, as brakeman, fireman, engineer, etc. In 1886, he passed through a severe attack of "inflammatory rheumatism," "all joints of the body" being implicated. For six months he was unable to do any work. The following year, while braking, he received an injury to the index and middle fingers of the right hand. In December,

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[13] For a thorough study of the symptoms of syringomyelia I would refer you to Prof. Rumpf's paper in Neurologisches Centralblatt, 1889, pp. 185, 222, and 257. For a careful, painstaking microscopical examination of the diseased cord, see Van Gieson's paper in the Journal of Nervous and Mental Disease, *loc. cit.*

1888, he was compelled to stay on his engine fifty-six consecutive hours. Completely exhausted, he left for home, and for several days was unable to leave his bed on account of severe headaches and dull aching pains along the spine. On resuming work some time afterward, he found that his strength was failing him; his arms would give out quickly, and he noticed that he could touch the hot parts of his engine without experiencing any pain. On several occasions his hands became blistered by coming in contact with the hot iron, and yet he was totally ignorant of when and where the burns were received. Soon thereafter he was compelled to stop work, his hands and arms were wasting rapidly, the muscles of the shoulders were in constant twitching, and his gait was becoming labored and unsteady. In August, 1891, after having consulted several physicians who pronounced his case rheumatism, paralysis, wasting of the muscles, etc., he decided to come to Buffalo for treatment.

Status Præsens.—I noticed nothing striking about his gait or carriage except that he walked rather cautiously and tried to favor his right hand as much as possible.

Psyche.—His mind was free and active; he talked intelligently on all subjects under discussion, and appeared to be very hopeful regarding the outcome of his disease.

Motility.—Head and neck: The muscles are well developed and perform their various functions without any disturbance. The movements of the eyeballs are free, unrestricted; the iris reacts to light and accommodation; the tongue shows no deviation on protrusion.

Arms: The right arm is perceptibly weakened, so that the patient has little use of it. He is barely able to flex the forearm, or to extend pronate or supinate the hand. Flexion and extension of the fingers can be accomplished, but he is unable to pick up small objects or to button his clothes with this hand. The muscles about the shoulder joint are also weakened, and on removing his hat is obliged to lower the head to the level of his waist. The little motion which he possesses over the shoulder comes from the levator anguli scapulæ and trapezius.

The left arm is less affected than the right, although it is far from possessing its normal strength. With this arm he is still able to dress himself and attend to his wants, but he complains of it growing gradually weaker.

August 1, 1891.—The dynamometer gives right hand, 42; left hand, 48. Three days later, after the use of electricity, right, 48; left, 50.

December 1, 1891.—Right, 35; left, 40.

March 1, 1892.—Right, 20; left, 30.

Atrophy.—The supra and infra spinati, deltoids, muscles of the arm and forearm are markedly atrophied. The interossei, thenar and hypothenar muscles are wasted to a slight degree; the right arm, being the weaker, is naturally more affected than the left.

Measurements made August 1, 1891, show the size of the right and left arm respectively.

Left Upper Arm. Circumference.	*Distance from Acromion.*	*Right Upper Arm. Circumference.*
9⅛ in.	4½ in.	9½ in.
8⅞ "	7½ "	8½ "
8⅞ "	9¼ "	8¼ "
Forearm.	*External Condyle.*	*Forearm.*
9¼ in.	3 in.	8⅞ in.
8⅜ "	6 "	7¼ "
6⅞ "	10 "	6⅝ "
Hand.	*Tip of Median Finger.*	*Hand.*
8½ in.	4½ in.	8⅛ in.

Circumference of chest 9 in. cephalad of the umbilicus, 32½ in.

December 1, 1891, another series of measurements was made, with the following results:

Left Upper Arm. Circumference.	*Distance from Acromion.*	*Right Upper Arm. Circumference.*
9½ in.	4½ in.	9¼ in.
8¾ "	7½ "	8⅝ "
8⅝ "	9½ "	8⅝ "
Forearm.	*External Condyle.*	*Forearm.*
9 in.	3 "	8¾ in.
7⅞ "	6 "	7⅝ "
6⅝ "	10 "	6¾ "
Hand.	*Tip of Middle Finger.*	*Hand.*
8¼ in.	4½ in.	8⅛ in.

Circumference of chest 9 in. cephalad of the umbilicus, 32½ in.

Another series of measurements was made on March 1, 1892, which resulted as follows:

Left Upper Arm. Circumference.	*Distance from Acromion.*	*Right Upper Arm. Circumference.*
8⅞ in.	4½ in.	8¾ in.
8⅛ "	7½ "	8 "
8 "	9½ "	7⅞ "
Forearm.	*From External Condyle.*	*Forearm.*
8 in.	3 in.	7⅞ in.
6⅞ "	6 in.	6¾ "
6 "	10 "	5⅞ "
Hand.	*From Tip of Middle Finger.*	*Hand.*
8 in.	4½ in.	7⅞ in.

The electrical examinations made December 1, 1891, and March 1, 1892, show no qualitative changes whatever; the cathode closure contraction in every instance was short, sharp and quick. The only change was a quantitative one. The anode, 40 c.m., was always placed over the sternum; the cathode employed was Stintzing's normal electrode (3 c.m.). The readings were taken from a Hirschmann galvanometer.

Left Side.	*Galvanic Current.*	*Right Side.*
2 ma.	Radial nerve.	2 ma.
1¾ "	Ulnar nerve	1½ "
3 "	Median nerve (elbow).	3⅛ "
2¾ "	Median nerve (wrist)	2¾ "
2¼ "	Deltoid muscle	2¾ "
1 "	Biceps muscle.	2⅜ "
1¼ "	Supinator longus.	4 "
2½ "	Flexor carp. radialis.	4 "
3 "	Flexor carpi urnaris.	3⅜ "
2¾ "	Flexor pollicis	3 "
3 "	Opponens pollicis.	3½ "
3 "	Adductor pollicis	3½ "
3 "	Flexor minimi digiti	3¼ "
3 (?) "	Dorsal interossei	2 "

Left Side.	*Faradic Current.*	*Right Side.*
10.5	Radial nerve.	10.6
10.6	Ulnar nerve.	10.5
9.8	Median nerve (elbow)	10.5
9.5	Median nerve (wrist)	9.6
9.4	Ulnar nerve (wrist).	9.4
12.3	Biceps muscle.	12.

Left Side.	*Galvanic Current.*	*Right Side.*
11.6	Supinator longus	10.
8.8	Flexor carpi radialis	8.5
10.5	Flexor carpi ulnaris	10.
9.3	Flexor pollicis	8.9
9.1	Opponens pollicis	9.6
9.2	Adductor pollicis	9.1
8.7	Flexor minimi digiti.	9.
8.7	Dorsal interossei.	8.7

Through some inadvertence the deltoid muscles were not examined. The cathode closure contraction in every case was greater than the anode closure contraction.

The examination made March 1, 1892, under exactly similar conditions as the previous ones, showed no particular change. I will only add here the results obtained with the galvanic current.

Left Side.		*Right Side.*
2¾ ma.	Radial nerve	1¾ ma.
1⅝ “	Ulnar nerve	1⅞ “
3½ “	Median nerve (elbow)	2 “
2¼ “	Median nerve (wrist).	1¾ “
2 “	Ulnar nerve (wrist).	1¼ “
3½ “	Deltoid muscle.	2 “
3½ “	Biceps muscle	2¼ “
4 “	Supinator longus.	4 “
4 “	Flexor carpi radialis	2½ “
3½ “	Flexor carpi ulnaris	3 “
1½ “	Flexor pollicis.	2½ “
3 “	Opponens pollicis.	2½ “
2½ “	Adductor pollicis.	3 “
3¼ “	Flexor minimi digiti.	2¾ “
4 “	Dorsal interossei.	3½ “

I did not make an electrical examination of the lower extremities, neither did I take any measurements.

Tendon Reflexes.—The biceps and triceps tendon reflexes, likewise those of the flexors and extensors of the hands were absent. The patellar and achilles tendon reflexes were markedly exaggerated. Ankle clonus was present on both sides. The superficial reflexes were abolished.

Fibrillation.—Fibrillary contractions were present at intervals, especially of the deltoids. It was almost impossible to make a correct reading of the electrical examination of these muscles on this account.

The body and extremities presented nothing worthy of attention; the spine was erect, not painful; genital organs well developed, and the muscles of the legs were hard and well preserved.

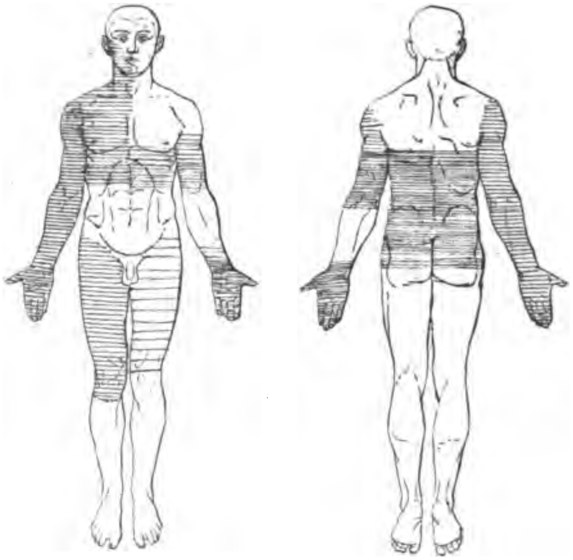
Sensibility.—The general or tactile sensibility seemed to be unimpaired. With closed eyes the patient promptly responded whenever the skin was touched, whether by a camel's-hair brush, or a blunt metallic point. He was also able to distinguish between the two. The muscular sense was undisturbed. On seeing some recent scars upon the hands, I asked the patient whence they came, but he could not say. This led me to make a thorough examination of the thermal and pain senses, and suggested to me the probable diagnosis of syringomyelia. The sense of pain and of temperature were diminished over certain areas of the body and extremities. Wherever thermo-anæsthesia existed there also would be found partial or complete analgesia. The only region of the body where this did not hold true was on the back. On the right side from the lower border of the scapula to the thigh there existed analgesia with loss of the sense of heat, while on the left side there was analgesia with loss of the sense of cold. The illustrations will perhaps show the areas of impairment of these senses better than they can be described. (See page 842.)

Trophic and Vosomotor Disturbances.—The hands were cold and cyanosed, the skin roughened, presenting here and there a vesicular eruption. The circulation in the hands was sluggish, and injuries healed very slowly, leaving large prominent scars. The palms were continually moist, and this hyperidrosis seemed to affect the whole body, especially the face. The finger nails were thickened, and extremely brittle; the hair covering the hands and arms was long and dense.

There were no painful spots along the course of the various nerves; in fact, no subjective symptoms save a slight numbness about the hands. To ascertain whether the hands were cold or warm, the patient would carry them to his forehead and judge by the sensation of the contact. The joints of the upper and lower extremities were free, painless, and not enlarged. The thoracic and abdominal viscera offered nothing abnormal. The urine was generally acid in reaction, of light specific gravity and contained neither albumen nor sugar.

Course.—The course of the disease was rapidly progressive. On first seeing him in August, 1891, he was able to use his left hand as he chose, and could assist with his right. Gradually he lost strength in both hands despite the use of massage, electricity, etc., so that in March, 1892, he could scarcely lift them. This story is perhaps best told by the dynamometer.

In August, 1891, the right hand measured 42, left 48; while in March, 1892, the right measured 20, the left 30.



The ruled portions of the body indicate the presence of thermo-anæsthesia and analgesia. The left leg is only partially affected. The free portions offer no disturbance of these senses.

The eruption and vasomotor disturbances of the hands yielded to the galvanic brush, and when I last saw him his hands were in better condition in this respect than before. The sphincters gradually lost power, although the vesical and anal reflexes seemed to remain intact. The legs, although not appearing to waste, were growing weaker, the gait more spastic, and his general condition poorer, so that in a few weeks he will undoubtedly have to keep his bed. Upon the urgent request of his relatives he returned to his home, and nothing more has been heard from him (March 25, 1892).

If we can judge a disease by its symptoms, and the symptoms are but the outward manifestations of the disease, then the affection known as syringomyelia must be diagnosed by certain characteristic signs and symptoms. Comparing the symptoms of my patient with those mapped out by authors and investigators on this subject, I have no hesitation in pronouncing the case in question one of syringomyelia. The cardinal symptoms as muscular atrophy, thermo-anæsthesia and analgesia, and such secondary symptoms as trophic disorders, scoliosis, and the spastic-paretic gait are all present save one, and that scoliosis. Blocq says that curvature of the spine is an almost constant symptom, and the majority of writers on this subject have found this to be the case. I see nothing in the pathology of syringomyelia that depends upon, or calls forth, a spinal deformity, and hence do not regard it as a necessary adjunct in the symptomatology. Cases offering all of the cardinal symptoms and some of the secondary can scarcely be denied admission into this select circle, just because they lack one of the minor points.

The diagnosis of syringomyelia can be made with a tolerable degree of accuracy if the patient be thoroughly examined, and the differential diagnosis between it and analogous clinical pictures constantly borne in mind. Diseases which have many points in common with syringomyelia are anæsthetic leprosy, Morvan's disease, multiple neuritis, hysteria, muscular atrophy, and amyotrophic lateral sclerosis. Morvan's disease and anæsthetic leprosy are of such rare occurrence in America that the differential diagnosis need not be considered. Hysteria and multiple neuritis, as a rule, have very few symptoms which could be construed as syringomyelia; exceptional cases of hysteria might for a time simulate syringomyelia, but by close watching and careful repeated examinations, the counterfeit will be readily detected. The two affections which offer to the eye an aggregation of symptoms closely resembling syringomyelia are amyotrophic lateral sclerosis, especially in its first stages, and progressive muscular atrophy. The differential diagnosis of these affections as I have met them, ignoring for the present text-book descriptions, may be tabulated as follows.

	MUSCULAR ATROPHY.	AMYOTROPHIC LATERAL SCLEROSIS.	SYRINGOMYELIA.
Age.	25-35.	25-35.	25-35.
Sex.	Male.	Male.	Male.
Onset.	Gradual.	Gradual.	Gradual.
Course.	Progressive.	Progressive.	Progressive.
Atrophy, muscular.	Marked.	Marked.	Marked.
Tactile sensibility . .	Intact.	Intact.	Intact.
Temperature sense.	Normal.	Normal.	Thermo-anæsthesia.
Sense of pain. . . .	Normal.	Normal.	Analgesia.
Reflexes, tendon. .	Diminished or absent.	Exaggerated.	Exaggerated.

The similarity of these three affections is quite striking; and in diagnosing a case of syringomyelia, the diagnosis will depend upon the stage of the examination —as progressive muscular atrophy, amyotrophic lateral sclerosis, or syringomyelia.

382 VIRGINIA STREET.

ATROPHY AND HYPERTROPHY OF THE CEREBELLUM.

In the "Annales méd. psych.," 1891, Doursont reviews eight cases, with autopsy, of atrophy of the cerebellum, and five of hypertrophy, and concludes from his work that Gall's theory is utterly unfounded. In one case of atrophy alone was there exaltation in the sexual sphere. Clinical and anatomo-pathological facts tend to prove that the cerebellum gives out impulses of movement and equipoise. In hypertrophy and atrophy alike, equilibrium is equally affected. L. F. B.

Periscope.

EXCERPTS WILL BE FURNISHED AS FOLLOWS:

From the Hollandish, Swedish, Danish, Norwegian, German, Portuguese, Roumanian, Spanish and Italian:
F. H. PRITCHARD, M.D., Norwalk, O.

From the Swedish, Danish, Norwegian and Finnish:
FREDERICK PETERSON, M.D., New York.

From the German:
WILLIAM M. LESZYNSKY, M.D., New York.
BELLE MACDONALD, M.D., N. Y.

From the French:
L. FISKE BRYSON, M.D., N. Y.
G. M. HAMMOND, M.D., N. Y.

From the French, German and Italian:
JOHN W. BRANNAN, M.D., N. Y.

From the Italian and Spanish:
WILLIAM C. KRAUSS, M.D., Buffalo, N. Y.

From the Italian and French:
E. P. HURD, M.D., Newburyport, Mass.

From the German, Italian, French and Russian:
ALBERT PICK, M.D., Boston, Mass.

From the English and American:
A. FREEMAN, M.D., New York.

From the French and German:
W. F. ROBINSON, M.D., Albany.

The Editor will not accept as ORIGINAL ARTICLES and CLINICAL CASES those that have appeared elsewhere.

Authors are requested to make none but typographical corrections on the proof sent to them. The manuscript must represent the final form in which the article is to be printed.

PHYSIOLOGICAL.

SOME OF THE INFLUENCES WHICH AFFECT THE POWER OF VOLUNTARY CONTRACTION.

Warren P. Lombard, M.D. (Jour. of Physiol., February, 1892). This paper, by an American physiologist, represents one of the substantial contributions made to science during the past few years. No better abstract can be made of the subject than to give an epitome of the summary as stated by the author.

The amount of fatigue experienced by the central muscular apparatus in producing a long series of voluntary muscular contractions does not correspond with the number of times that the muscle is stimulated, at least when the rate is not more than once a second. It appears to depend rather on the strength of the impulse sent out, because the total height to which a given weight can be lifted by such a series of contraction is a much more accurate expression of the condition of the central mechanisms than the number of times that the muscle can be contracted. Further, the fatigue of this central apparatus does not correspond with the amount of conscious effort expended in the work, for very many maximal voluntary contractions can be made without fatigue, provided the weight is small. Indeed, it would seem as if the strength of the impulses sent outward to the muscle depended, not only on the voluntary effort, but on some influence which passed inward from the muscle itself.

The following influences were observed to lessen the ability to do voluntary muscular work: 1st. General and local fatigue. 2d. Hunger. 3. Lessening atmospheric pressure, including the regular and irregular variations. 4th. High temperature, especially if associated with much humidity. 5th. Tobacco.

Those which increase the ability to do voluntary muscular work are: 1st. Exercise. 2d. Rest, and especially sleep. 3d. Food. 4th. Increasing atmospheric pressure, including regular and irregular variations. 5th. Alcohol.

Exercise acts in the same direction as sleep and food, and is a very potent factor in increasing the ability to do voluntary muscular work. While the two last mentioned act to restore the strength, exercise increases the power. Sleep has a much greater effect than food and is much more beneficial than waking rest. A rising barometer favors the action of food, sleep and exercise to increase the power, while a falling barometer opposes them, and may overcome their influence and lessen their strength.

In the writer's individual experience the action of tobacco and alcohol was very marked. Alcohol in small doses increases the strength markedly, even when the barometer is rapidly falling. Tobacco may prevent the effect of a rising barometer or of food from showing itself, and seems even to lessen the strengthening effect of exercise, the effects of these two substances, therefore, seemingly neutralizing themselves. The influences of both were very temporary, and the statement in reference to alcohol is based on the use of small quantities.

J. C.

PATHOLOGICAL.

THE DIFFERENT FORMS OF CARDIAC PAIN.

S. C. Chew, M.D. (Med. News, June 18, 1892). After remarking in a general way on the applicability of the various terms that are used to express painful sensations in the region of the heart, the writer concludes that "cardic pain" or "pain in the heart" are the terms to be preferred. This pain is found as a concomitant in three different conditions: angina pectoris, any condition which brings about an obstruction or resistance to the flow of blood through the arterioles such as an arterio-sclerosis, and third cardiac dilatation. When these three forms of disease are considered together and an endeavor made to co-ordinate them as to their cause, it is quite possible that the chief factor in the production of pain common to all of them is pressure brought to bear upon the cardiac nerves or upon the cardiac ganglia themselves. The connection between these ganglia and the cervical and brachial plexuses give a ready explanation of the extension of the pain to the arms that may occur in any form of cardiac pain. In the first or strictly paroxysmal form, true angina, the pressure may be occasioned by the sudden tension of the arterioles: in the second form by the general sclerotic condition of the vessels; and in the third form with dilatation of the heart, by the attenuation of the heart walls.

HEREDITARY TREMOR.

Deboue and Renault have investigated this subject. The literature is limited to a thesis by Fesnet and a lecture by Charcot. The writers have observed two families in which the affection was present. The one consisted of the grandmother, son and son's daughter. The tremor is most pronounced in the former and least so in the latter, which is easily seen by comparing their handwriting. The affection was observed in the eyelids, lips, tongue and arms; it was not noticeable as long as they were quiet. The little girl only presented a few choreiform movements. Hereditary tremor is easily separated from the other classic forms.

1. SENILE TREMOR appears late in life and presents 3.5 vibrations instead of 8.

2. PARALYSIS AGITANS is accompanied by tremor, which also persists during rest; hereditary tremor has no contractures.

3. SCLEROSE ENPLAGUES presents intention tremor.

4. GENERAL PARALYSIS has peculiar movements in speaking, but the eyelids are nearly always uninvolved.

ALCOHOLIC TREMOR resembles hereditary tremor, but it is usually markedly present in the fingers.

6. MERCURIAL TREMOR is not observed when the patient is quiet; as an intention tremor it much resembles that of multiple sclerosis.

7. BASEDOW'S DISEASE has tremor of the trunk and extremities; the face and tongue are free.

8. HYSTERIC TREMOR may be very similar.

In *résumé*, there is a hereditary tremor, which may pass, without change, from the mother or father to their children, but which does not attack all the members of a family. It begins in childhood and increases with age. The vibrations are rapid (eight per second); it is situated especially in the arms, yet it may appear in the legs, lips, eyelids and tongue. It ceases when the patient is completely quiet, and continues, but does not increase with intentional movements.—*Norsk Magazin for Laege videnskaben*, No. 3, 1892. F. H. P.

THE PRESENCE OF A LARGE CEREBRAL TUMOR IN THE LEFT ROLANDIC REGION WITHOUT CORRESPONDING MOTOR SYMPTOMS.

The patient, a married man, fifty years of age, had had attacks of polyarticular rheumatism years ago. On entering the hospital he complained of general malaise and debility. At the objective examination the patient became unconscious; the muscles of the neck and arms were somewhat rigid, the left pupil was dilated and did not react to light; temperature 38°C. This state of things vanished during the succeeding days, and on the fourth day the patient was somewhat conscious. The dilatation of the left pupil remained fixed, no reaction to light, and, moreover, there was found a paralysis of the left external rectus muscle. On the fifth day he fell into a stupor which increased until his death. There was no history of vomiting nor convulsions; the temperature rose to 40° C. There was, therefore, no paralysis of any group of muscles, with the exception of the rectus externus on the left side. The author was inclined to diagnose the case as meningitis, or rather, pachymeningitis. The autopsy revealed the following: An endothelial sarcoma of the dura mater, which had attained the size of a large hen's egg, and which, developing in the Rolandic region, had compressed, pushed aside, and atrophied a large portion of the ascending frontal, ascending parietal and inferior parietal convolutions. The cavity formed by the growth measured 5 c.m. in width, 7 in length and 4 in depth, and yet there was no weakness or disturbance of motility of the opposite half of the body. (L. Piochini, in Rivista clin. archiv. ital., anno 31, p. 1.) W. C. K.

ISOLATED PARALYSIS OF THE MUSCULO-CUTANEOUS NERVE.

Bernhardt (Neurologisches Centralbl., April 15, 1892). A continuation of the contribution made by Winschied in the same journal, No. 7. After remarking on the scarcity of reports in the literature of this affection, in which he says that he has been able to find only one case, and that reported by Erb in his text-book on disease of the peripheral nerves, the author goes on to speak of two cases of this condition, the first of which he has already reported in Virchow's Archives, Vol. 78, page 277.

In the first case, a thirty-seven-year-old carpenter presented the signs of the condition three weeks after a dislocation of the humerus which had resulted from a fall, the luxation having been reduced in a few hours after it happened. Three weeks after the accident the patient first came under the reporter's observation, and the only movement retained at this time was flexion of the forearm, and this could be done only fairly, and then seemingly by the action of the supinator longus alone. Even when he made the greatest efforts to bend the elbow the biceps and brachialis anticus remained relaxed. Subjectively the patient only complained of a feeling of numbness on the back part of the middle of the hand. ACC equalled CCC. Contraction occurred from a weaker galvanic current than was required by the opposite flexors. Faradic current caused no response either in nerve or muscle.

His second observation was recorded in 1884 (Centralbl. f. Nervenheilk., No. 22). And in this case a very similar condition of affairs resulted from a severe injury received over the shoulder, the patient came under observation two and one-half weeks after the injury. The direct and indirect faradic excitability of the brachialis anticus and the biceps were nearly abolished and the contour of the supinator longus, which was unaffected, was brought out into great prominence. By direct galvanic sitimulation, ACC equalled CCC. Numbness was felt along the radial side of the forearm to the ball of the thumb, and at first in the tips of the fingers. Under the use of the galvanic current the patient was enabled to resume his work after a few weeks, and eventually fully recovered. J. C.

PERIPHERAL NEURITIS IN TYPHOID FEVER.

J. S. Bury, M.D., M.R.C.P., of London (Medical Chronicle, June, 1892), believes there is a multiple neuritis initiated by the virus of typhoid fever which is frequently present in this disease. In one set of cases we may suppose that the action of the poison on the nerves is too slight to give rise to outward manifestations or that these are masked by the general symptoms of the fever. In another set of cases the toxic influence on the nerves appears to be revealed by a series of irritative phenomena, such as neuralgic pains, cutaneous and muscular hyperæsthesias, exaggerated reflexes, and cramps and contractures of various muscles; while in a third group the presence of an atrophic paralysis, its distribution, progress and associations leave little doubt on the mind of the observer that he has to deal with a genuine parenchymatous neuritis, and frequently with one of wide distribution throughout the body. A. F.

TRANSMISSION OF CHOREA FROM DOG TO DOG BY INOCULATION.

In the "Bulletin médicale of the Soc. de Biol." for April 13, 1892, there is recorded some experiments on the inoculability of chorea made by Tribaulet. He took a dog suffering from well-marked chorea, and with the most rigid antiseptic precautions he obtained some of its blood and from this made cultures; then with these cultures he inoculated other dogs. The first dog inoculated, who was already the victim of chorea, did not show any particular change in regard to the choreiform movements, either in the shape of amelioration or increase, but the general condition of the dog was much changed for the worse, and death followed very rapidly. The second dog on which the inoculation was tried was a very young pup, and he succumbed very rapidly, the principal attending conditions being acute trophic changes. The third dog experimented on had, at the time when the report was made, survived the experiment for upward of six months and presented well-marked salatoric movements, analogous to those which develop spontaneously in the dog and similar to those occurring in the dog from whom the blood was taken which served for the culture. This third dog presented quite extensive trophic troubles of the skin and nails and general marked muscular atrophy, and at the time when the experimentor made his report the general health of the dog was in a bad way, indicative of near dissolution. J. C.

VARICOSE VEINS AS A CAUSE OF SCIATICA.

In the number of "Medicine Moderne" for May 12, 1892, Quenu states as his opinion that varicose veins are frequently responsible for the production of a severe and persistent sciatica; and in expressing this opinion his experience coincides with the experience of many other neurologists and practitioners who have seen much of this trouble. He cites a case in whom many other measures were tried for the relief of the pain, but without success, until a long elastic stocking, reaching to the groin, was applied, when relief was obtained. In two other cases in which the pain had been intolerable, he dissected the vein away from the nerve, the pain disappeared, and in one case it has not returned for upward of a year; and in the other several months have elapsed since the operation was performed, and there has been no return of the pain. In some cases of sciatica he has found the varicose veins around the nerve and adherent to it. The operation of nerve stretching he looks upon with disfavor and of no great utility. J. C.

THE NATURE OF HYSTERIA.

Under the above heading Mr. Lim Boon Keng attempts to discuss the power behind the throne in the causation of this ever-interesting disease (Edinburgh Medical Journal, April, 1892). Whether he succeeds satisfactorily to himself or not is not known, but it is to be presumed that he does. He finds fault with our present definitions, such as describing it as a neurosis associated with defective inhibitory power or caused by a perverted will, and he cannot brook the terms " functional disease" and "general neurosis," because they mean nothing to him. But paradoxical as it may seem, immediately after finding these objections he asserts that mild cases of hysteria may be explained by a functional disturbance of the cortical cells concerned in ideation, especially when associated with neurotic condition. The point which Mr. Lim Boon Keng evidently would like to bring out is that in perverted states of some of the functions of the body there are manufactured within the system certain substances of an alkaloidal nature which, on being absorbed into the system and manifesting their deleterious action on those cortical cells concerned in ideation, cause them to act in a sinister fashion, and in turn other cells or areas of nerve matter in relation with the before-mentioned ideation cells are thrown out of gear with the resulting symptom complex of hysteria. We are in danger of having all diseases, the *raison d'etre* of which is yet dubious, explained along these lines within the next decade if the passion for this sort of thing, as lately manifested, does not cease. And to merely make a wild statement and a few visual speculations, as has been done by Mr. Lim Boon Keng, without bringing forward a single fact or semblance of a fact in their proof, does not help along the good cause very materially. J. C.

THE RELATIONS OF PELVIC DISEASE TO PSYCHICAL DISTURBANCES IN WOMAN.

Dr. George H. Rohé, of Catonsville, Md., pointed out the frequency with which bodily conditions influenced mental states. Thus a torpid condition of the intestines, Bright's disease, putrefactive processes in the intestinal canal, etc., might give rise to melancholia and other disorders of the mental functions. It is not irrational to suppose likewise that diseases of the female sexual apparatus would have a not inconsiderable influence in the production or perpetuation of mental disorders. As a contribution to the knowledge of the subject the following report was submitted.

In a hospital containing 200 insane women, 35 were subjected to vaginal examination and 26 found with evidences of pelvic diseases. In 18 of these the uterine appendages were removed with the following results:

Sixteen recovered from the operation and 2 died. Of the 16 recovered, 3 have been discharged from the hospital completely restored, both physically and mentally. In 10 considerable improvement followed the operation in both physical and mental conditions, and in 3 the operation was of too recent a date to allow any definite expression of opinion.

The mental disorder present in the 18 cases was melancholia in 6 cases, simple mania in 1, puerperal mania in 4, hysterical mania in 1, periodic mania in 2, hystero-epilepsy with mania in 1, and epilepsy with mania in 3.

The author, basing his opinion upon his experience, concludes as follows:

"The facts recorded demonstrate first: That there is a fruitful field for gynecological work among insane women; second, that this work is as practicable and can be pursued with as much success in an insane hospital as elsewhere; and third, that the results obtained not only encourage us to continue in the work, but require us, in the name of science and humanity, to give to an insane woman the same chance of relief from disease of the ovaries and uterus that a sane woman has."—*Transactions of American Association of Obstetricians and Gynecologists, Fifth Annual Meeting.*

CLINICAL.

GILLES DE LA TOURETTE'S DISEASE.

L. Stembo, in the "Berliner klin. Wochen.," No. 28, calls attention to this disease, which he says is endemic in Russia and Siberia, and known there under the name of Myriachit. It is characterized by attacks of involuntary movements of the limbs and body and also with some certain fixed mental impression. The movements were not only involuntary, but seemed to be compulsory. The disease began generally with muscular twitchings, which commenced in the face, finally involving the entire half of the body. The conditions which constitute coprolalie and echolalie were also present. In sleep all appearance of the disease disappeared. It was most frequent between the ages of four and twenty years, males seemed more prone to it than females. The etiology of this disease was not by any means clear. In one of the author's cases, the patient, aged thirty-seven years, had suffered from nervousness since his twentieth year, his sixteen-year old son was already showing the first indication of the trouble. Treatment so far had been valueless. In diagnosing these conditions, care must be taken so as not to confound it with paramyclonous, chorea, chorea electrica, hysteria and athetosis, as it might be mistaken for any one of them.—*St. Petersburger med. Wochenschrift.* B. M.

A CASE OF CONGENITAL FACIAL PARALYSIS.

In the "Neurologisches Centralblatt," July 15, 1892, Schultze gives the history of a case which came under his observation.

The patient was a child, four years old, born normally at full term. The parents were healthy. The present paralysis was noticed immediately after birth. The left eye remained open. The child, who is otherwise apparently healthy, has a well-marked left facial paralysis. The palate is not involved. Hearing normal. No trophic changes. Muscles of mastication unaffected. No sensory paralysis. The left pupil is slightly larger than the right. Reaction normal. The left eye is not prominent. The ocular movements are normal in all directions. The only abnormity consists in a slight horizontal nystagmus. No trace of ptosis. Tongue normal. Extremities in every way normal. Knee-jerks weak, but distinct. No clonus. No atrophy. No sensory disturbance. Bladder and rectum normal.

Electrical Examination.—Left facial nerve—loss of irritability to both currents. Only the left half of the orbicularis oris reacts to a strong faradic current. The examination with galvanism had to be abandoned on account of the strong current required. Mechanical irritability abolished. He is of the opinion that we have here essentially a left peripheral facial paralysis, and admits the possible involvement of the pupillary fibres of the third nerve. The cause and location of the lesion is obscure. The tendency in the literature of to-day leads one to entertain the view that the lesion may be that of defective development in the left facial nucleus. He is unwilling to entirely exclude a peripheral lesion, as it seems easier to conceive that the nerve was injured toward its periphery, than to assume that in an otherwise normal central organ just one special nucleus should remain undeveloped. It is true that further defects in development may take place in these central organs without manifesting any definite symptoms. The mere existence of nuclear disease associated with peripheral atrophy would not prove with certainty a primary nuclear destruction.

According to the well-known laws of Gudden even after destruction of the peripheral nerves in earlier life, a degeneration of the corresponding nuclei follows.

W. M. L.

ON CERTAIN PECULIARITIES OF THE KNEE-JERK IN SLEEP IN A CASE OF TERMINAL DEMENTIA.

Noyes (Amer. Jour. Psychol., Vol. iv., No. 3, April, 1891). These observations were made upon a patient suffering from terminal dementia who had been in the McLean Asylum from 1841, and who showed a greater susceptibility to sensory stimuli than persons in health:

The conclusions formulated by the author are:

1st. Sensory stimuli received during sleep produce a much greater effect and diffuse over a much longer interval than in healing individuals.

2d. In a condition of half sleep, when the peculiar tendon is struck by blows of uniform strength at five seconds intervals, the knee-jerks falls into groups, and synchronous plethysmographic tracings suggest that these groups have some connection with the Traube-Hering curve.

If the truth of the second proposition can be conclusively established, several important corollaries would seem to follow. These are here stated as facts for the sake of presenting dinifite propositions, the truth or falsity of which must be submitted to further experimental investigation. J. C.

FRACTURE OF THE VERTEBRAL COLUMN—COMPLETE SECTION OF THE CORD—ABOLITION OF THE REFLEXES.

In the June, 1892, number of the "Anales del circulo medico Argentino," Dr. Tornu narrates a case of spinal injury in which the reflexes were abolished from the day of the accident to the day of death. A seaman while at work was struck on the back by a barrel of nails. On examination he was found to have complete paraplegia of the lower extremities, total abolition of the sensibility and of the reflexes, with retention of urine and fæces. In the dorsal region there was a large painful swelling, which was intensified on pressure or by moving the body. A diagnosis of fracture of the vertebral column, with compression of the spine, was declared. Shortly thereafter the retention of fæces gave way to incontinence, the urine became ammoniacal, purulent; the patient was continually losing ground, delirium set in, and the patient died in coma. On autopsy the cord was found to be completely severed by a fragment of the vertebra, and the caudal portion of the cord degenerated and converted into a soft pulpy mass. The writer calls special attention to the fact that the reflexes were abolished throughout the duration of the sickness, thus supporting Bastian's view, that when the cord is severed by traumatism there ensues total abolition of the excito-motor power, because of loss of continuity between the caudal segment and the brain. W. C. K.

INJURY OF THE CAUDA EQUINA AND CONUS MEDULLARIS.

In "New York Medical Journal," August 22, 1891, C. A. Herter, M.D., reports the case of a man injured by a heavy door falling on him. He regained consciousness in a few hours, and complained of pain and tenderness over the dorsal spines, which were somewhat prominent. There was loss of power in lower limbs, absence of knee, cremaster and plantar reflexes, and incontinence of urine and fæces. After a week, slow recovery of power began in the legs. The sphincters, however, remained paralyzed, and early cystitis developed. Eighteen days later anæsthesia and analgesia were observed in legs, feet, and on either side the median furrow of the buttocks in a semi-elliptical area and on either side of the pubes. There was continuous pain referred to the sacrum. The lower extremities were atrophied with loss of faradic contractility in the muscles below the knee, and diminished galvanic contractility with reversal of the polar formula. General improvement followed, and in three months he walked with canes, but still had loss of sensation on the buttocks and paralysis of the sphincters. Atrophy of the legs became more marked, but the reflexes all returned. As no further improvement occurred, operation was decided on and the cauda exposed, but no pathological condition found. He died forty-eight hours later. The autopsy was limited to an examination of a specimen of membranes and inclosed cauda. To the right of the conus medullaris and partly covered by bundles of the cauda was a firm yellowish mass. The various bundles of the cauda were bound together by inflammatory matter. There were irregular thickenings of the dura and numerous adhesions. Part of the specimen showed hemorrhages and great cellular infiltration in the dura. About the cauda the pia was thickened and infiltrated with small spherical cells. In the most central nerve bundles the fibres were nearly all completely degenerated. The third and fourth nerve roots were normal.

A. F.

CHOREA AND THE APPEARANCE OF DENTITION.

(Houel, Nouveau Montpellier Medical, March 19 and 26, 1892.) This paper is a rather peculiar one, insomuch as it shows how eager physicians are to attribute chorea to any of the different affections to which childhood is exposed. The author speaks of two patients who suffered from this affection. One of the patients, a young girl, fifteen years of age, was taken with choreic movements involving the entire body, the onset of which could not be attributed to fright or any excessive emotion. She had suffered from metorrhagia and was profoundly anæmic. The second patient was fourteen years old, and was then suffering from her fourth attack. In both patients the nine-year molars were late in their appearance on both sides. The superior incisors are likewise delayed in their appearance. Reasoning from these conditions the writer follows out the idea of his colleague Baumel, who in a previous work gave it as his opinion that chorea is a disease predisposed to by anæmia, and the exciting cause in the precipitation of an attack is the irritation of dentition; that is, the anæmia is the predisposing cause and the dentition is the exciting.

Tedenat was very much concerned by the induration of the arteries which both of these cases presented. And without making the artero-sclerosis as the cause of the chorea, he thinks, that this depraved state of nutrition predisposes to it. And he finds some difficulty in making it clear to himself just what rôle the appearance of dentition plays in causing the attacks. But it in all the cases where the attack of chorea appeared with the swelling of the gums previous to the outcoming of the teeth, the symptoms ameliorated when the dentition became complete.

Baumel also noted that chorea was most apt to take place at the period in life; that is, between the ages of six and fifteen, when dentition of the two great molars occurs; the first appearing from the sixth to the twelfth year, and the second from the twelfth to the fourteenth.

Tedenat remarked that this period of life was not given over entirely to the development and appearance of the teeth, but an important process of evolution and development was going on in the ovaries, the uterus, the testicles, which was to bring about a remarkable change in these organs incident and previous to their taking on reproductive activity.

Gilis thought that chorea was a neurosis, which depended for its appearance on two great factors: first, a soil prepared by the inheritancy of certain predilections and diathesis; and, second, some trouble in the evolution of the organism, which is the determining cause. In this connection he had noticed that chorea was more apt to occur in young girls at the time of puberty; and without overlooking the influence of dentition at this time, he thought that the utero-ovarian evolution at this time exercised a far greater influence upon the general organism than did the evolution of dentition (Rev. gén. de méd. de chirurg. et d'obstet., April 27, 1892). J. C.

BERI-BERI: ITS CAUSATION AND TREATMENT.

Scott (Practitioner, May, 1892). In the above-quoted paper Dr. Scott gives the results of his experience in the study and treatment of beri-beri as he has seen it among the Chinese coolies. He discusses the subject clinically, and to some extent theoretically, and attempts to point out that disease, looked at from the clinical side, appears to arise from an altered condition of the blood, associated with excessive acidity, and that the symptoms are caused by this acidity or by the presence of an alkaloid having an action similar to that of muscarine.

The conclusions that he arrives at are shortly stated as follows:

We may attribute beri-beri, consistently with all the available evidence, to a blood change, with symptoms attributable to the presence of an alkaloidal or an extractive substance and to an excessive acidity of the blood. The mode of production of this substance has not yet been finally ascertained. While it is possible that beri-beri is caused by a change *per se* in the constitution of the blood, resulting in the formation of a specific poison, it is equally if not more probable that this poison is the product of a micro-organism which finds in the blood, after exposure to certain climatic and meteorological conditions, a suitable *nidus*. All the conditions under which beri-beri occurs are more or less favorable to the supposition that an asomycetes (Lacerda) which may exist in the soil or may be connected with the food (rice or fish) is the real cause of the disease. But others attribute it to a diplococus (Pekelharing), a bacillus (Ogata) a spirillum (Taylor). This micro-organism may, so long as it exists only in the blood, cause wet beri-beri. It generates a poison which acts like muscarine and originates an excessive activity along with disordered action of the sweat glands and kidneys. At the commencement of the disease this poison may be eliminated by oxidation by means of iron or by improved general metabolism. In later stages it is best neutralized by potash and ammonia, and it may be excreted by stimulation of the urinary tubules, while its specific action is counteracted on the blood-vessels by the means of atropine, and œdema is prevented. The accumulation of the poison can also be prevented by restoring the sweat glands to their proper activity. After a more prolonged infection a chronic neuritis is set up, as described by Scheuba, Ogata and others, accompanied by the usual paræsthesia and anæsthesia, and by paresis of the various peripheral nerves, of the phrenics, vagus, etc. In these later stages this neuritis is very similar to that caused by poisoning by bisulphide of carbon, alcohol, etc.; and the noxious substance no longer causes any symptoms of blood degenerations. The treatment then required is only that for the neuritis and debility.

Microscopically, the author has seen in the popliteal nerve of a case of dry beri-beri an interstitial infiltration, consisting of a few scattered foci of small cells, showing abundant nuclei, but not of sufficient extent as to be called pronounced interstitial neuritis. The dorsal spinal cord of another case showed the similar appearance; that is, a few small foci of proliferating cells. In this case there was also congestion of the vessels of the kidney, and the secreting epithelium showed cloudy swelling and some fatty degeneration. In neither case was it possible to see a micro-organism or microphyte.

The three generally recognized conditions as associated with the development of beri-beri are: 1. Defective dietary. 2. The presence of decaying matter, especially vegetable. 3. Dry and hot weather. J. C.

THYROID GRAFTING.

In the May number of the "Edinburgh Medical Journal," Macpherson reports a case of myxœdema treated by thyroid grafting. The patient had been under observation for about eighteen months, and had suffered from symptoms pointing to the disease for upward of four years.

The results of the operation were as follows:

1. Within twelve hours there was such a marked mental improvement in the patient as to be noticeable by every person who came in contact with her. She became talkative, cheerful, answered questions readily, and the mental reflex which was formerly so slow, became altered and quickened. Her intelligence and spontaneity markedly increased. Her speech, however, remained slow and drawling.
2. The average daily temperature for seven days after the operation was 99°, and for nineteen days after 98.9°.
3. The average daily quantity of urine passed for nineteen days after the operation was 41 ounces.
4. The fear at night, the melancholia, and the delusions disappeared on the day following the operation and have not since returned.
5. The vertical headache, which had been more or less persistent for three years, has not since been present.
6. The anæmic condition has been removed.
7. The skin is now softer, smoother, and the hair not so dry.
8. The quantity of urine passed has increased to average 52 ounces per diem.
9. Menstruation, which had for three years been irregular, is now regular, and of three days' duration.

In conclusion he does not claim that the operation has removed the myxœdematous condition, but it has relieved the symptoms, and he believes that this alleviation will continue. The author is of the opinion, also, that the almost instantaneous relief of some of the prominent symptoms, was due to the absorption of the secretion of the thyroid gland and the beneficial results continued on account of the vascularization of the gland tissue after the grafting.

Pertaining to the surgical technique he gives the following hints:

1. That the method of slaughtering sheep makes it extremely difficult to remove the gland with ordinary cleanlinesss, to say nothing of absolute sepsis.

2. That bleeding the animal to death necessarily depletes the vessels of the thyroid gland to such an extent as to make it doubtful whether vascular connections can ever take place in the humam body.

3. On account of the redundancy of fat in the inframammary region, I do not consider it a suitable part of the body for grafting tissue like the thyroid gland. I think a more vascular, more muscular locality should be selected. J. C.

PARALYSIS AGITANS IN A GIRL SIXTEEN YEARS OLD.

Quintard has recently described an attack of paralysis agitans occurring in a young girl sixteen years of age, the trembling having been present for upward of two years and limited entirely to the right hand. At one time it disappeared without leaving any trace, but returned in two months and involving not alone the same hand, but the arm and shoulder, and later on the trembling attacked the lower extremity on the same side. No apparent cause could be found for the manifestation of the symptoms.

The disease was characterized by movements occurring from thirty to forty times per minute, the movements being intentional in character, insomuch as the shoulders are raised disdainfully and the position of the elbows denote an attitude of unpleasantness, etc. The movements, short and rapid, are generally successive, and are augmented after fatigue, motion and anger, but are never painful. They cannot be voluntarily inhibited, but a muscular effort modifies them considerably.

Quintard discusses very completely the differential diagnosis of the affection, and asserts that the case was was one of paralysis agitans in spite of the youth of the patient, and some other irregularities in the course and development of the disease. The case is not unique, and Quintard says that cases have been observed by Moulard-Martin in a girl of sixteen years, and by Duchenne and Boulogne in a boy of sixteen years, and a case by Siredy in a girl of fifteen years. And Championniere, commenting on this subject, recalls the fact that, in 1874, Fioupe placed a case on record which was absolutely typical, as far as the aspect of the disease and causation were concerned, insomuch as it followed a fright caused by the explosion of a bomb. J. C.

ARREST OF HICCOUGH BY PRESSURE ON THE PHRENIC NERVE.

Prof. Leloir, of Lille, reports the incident where he was consulted by a little girl, twelve years of age, suffering from an irascible and incoercible attack of hiccough, the spasms occurring every one-half minute, and interfering with sleep and the vital functions of the body, so that it had become apparently a very serious matter to the life of the child. All sorts of remedies were tried, until it occurred to him to make compression of the phrenic nerve, on the left side between the sterno-clavicular attachments of the sterno-cleido mastoid muscle. The digital pressure, although painful, was kept up for upward of three minutes, and at the end of this time the hiccough had disappeared, and did not recur. Leloir avers that he has treated many cases of acute and persistent hiccough after this fashion, where the use of every other remedy tried has been followed by negative results, and he is quite sure that if the pressure is properly made, and with sufficient force and duration, that success will follow.

A CASE OF MULTIPLE SCLEROSIS OF THE BRAIN AND THE MEDULLA, WITH INTENTIONAL TREMOR.

Dr. Krzywicki (Deutsch. med. Wochensch., p. 255, 1892). This rather peculiar and interesting case was observed by Krzywicki in a young lad of seventeen years of age who had presented trouble with his speech for four years. His phonation was very difficult, and the sound which he was able to produce resembled very much a croaking and trembling. The appearance of the patient was rather peculiar, insomuch as the facial lineaments were effaced, and this gave a monotonous look or air to the expression. The patient had a great deal of trouble in keeping himself erect or in assuming the erect posture after he had sat down. The gait was spasmodic and paretic; there was wasting of the muscles; no nystagmus, and the pupils reacted normally; there was intentional tremor of the extremities. When the patient was asked to talk, a certain interval of time elapsed before he was able to respond, and during this time it could be seen that endeavors were made. While speaking, one was particularly struck by the change in the tone of the sound which was produced by the varying degrees of contraction. The trembling voice passed from the shrillest notes to the lowest sounds. On laryngoscopic examination it was observed that during the period when the patient was making endeavors to speak, the vocal cords were agitated by an extensive general vibration in jerks.

Under the influence of the administration of Fowler's solution and the application of galvanism there has seemed to be a considerable amelioration in the symptoms. J. C.

FIVE CASES OF PRIMARY MUSCULAR ATROPHY.

Dr. Calderai describes a family in the "Rivista generale Italiana di clinica medica," Nov. 21, 1891, in which five of the children were affected with muscular atrophy. The parents were in good health; the father in the last three years of his life had two epileptic attacks. Of nine children four are dead; one of these showed all the symptoms of muscular atrophy at the age of ten years. Of the five living children the baby only is unaffected; the remaining four have atrophy. The course of the disease has been the same in all—weakening and wasting of the lower extremities, atrophy of the thigh muscles, and apparent increase in size of the calf muscles, rendering the gait slow and waddling, the knees deformed, deviation of the vertebral column, etc. There is diminution of the electrical reactions, also of the tendon reflexes. Disturbances of the sensibility are wanting. The oldest is in a better condition than the others, and can take a short walk. In him the atrophy has reached the arms. One sister, twenty-one years of age, is not able to walk at all. She suffers from pseudo-hypertrophy along with hysteria. The two younger sons are more affected than the others. Here the atrophy has extended to the arms and thorax, giving rise to dyspnœic attacks. The author thinks these cases might be classed under the Leyden-Möbius type of muscular atrophy, and that they are of myo-pathic rather than myelo-pathic origin (Annali di Neorologia, Anno x., Fas. iii. W. C. K.

THERAPEUTICAL.

ANOTHER COAL-TAR DERIVATIVE OF GREAT VALUE.

If we consider that the modern drugs aristol, antipyrin, creolin, salicylic acid, etc., which have proved such a boon to suffering humanity, are proprietary medicines, owned in Europe (Germany), but are freely and justly praised by the medical profession, we should not refuse giving our endorsement to a similar remedy, whose discovery we have to thank the ingenuity and industry of some of our own countrymen, especially if the remedy proves a blessing in securing to many patients afflicted with pain almost instantaneous relief without exposing them to any risk.

Premising these statements, Dr. Hugo Engel says, that for these reasons he has made in the case of Antikamnia an exception to the rules, which has guided him for over twenty-five years, viz., that of never publicly endorsing this class of remedies. In every case he has found Antikamnia—taking into consideration its complete freedom from all unpleasant sequelæ or by-effects of any kind—the most reliable analgesic remedy known to him. The Doctor then continues in his preliminary report thus: It stops pain, when internally administered, almost with the rapidity and certainty of a sufficient dose of morphia applied subcutaneously, while it not only produces no after-effects, but does also not awaken in the patient any idiosyncrasy. I have given this potent drug a fair trial in my clinic for nervous diseases. Thus far I have used the remedy only in the various forms of neuralgia of a functional character, *i. e.*, where the pathogenic cause could not be discovered; and in some forms of hemicrania, in the lancinating pains of locomotor ataxia, and in neuralgia of the dental branches of the fifth nerve.

In cases of muscular rheumatism, in the acute form of lumbago, termed by our German confreres "Hexenschuss," and in the increased reflex excitability, and the peculiar nervous state following the withdrawal of morphia in individuals long accustomed to the use of this alkaloid, or of opium, Antikamnia has given me the same good results.

In neuralgia, where its effect is rapid and certain, I cannot yet speak of its possessing any curative effect, but we can surely be satisfied with a remedy which, internally administered, possesses no unpleasant after-effects nor toxic properties, and being free from the possibility of patients becoming habituated to its use, as it does not induce the least nervous excitation, stops pain with the certainty of a hypodermic application of morphia.

In conclusion, Dr. Engel expresses his opinion that the best mode of administering Antikamnia is in the form of compressed tablets, each containing five grains, of which he gives one at once; five minutes later, if no effect be observed, a second; and in the rare instances, where the relief is not marked about ten minutes after the second tablet, the patient takes a third: fifteen grains, therefore, within twenty minutes. The Doctor has thus far never needed more, nor has he ever been disappointed in its effect, nor seen any unpleasant symptoms arise. Neither pulse, temperature, nor respiration have the least alteration in patients under the influence of Antikamnia, up to the doses indicated.

In an exhaustive report published in the "Medical Summary," Dr. Hugo Engel gives the results, coinciding with those just mentioned, of a long series of investigations, including his researches into the antipyretic effects of Antikamnia, which he has found to be similar to those of antipyrin, while larger doses may be administered with impunity. We must refer the reader to the original report.

NOTICES.

The readers of the JOURNAL who desire to obtain the best sulphate of quinine, and in tablet form, may be interested in knowing that the largest manufacturers of this product in this country are placing on the market tablets of sulphate of quinine. Their purity is beyond question and utmost confidence may be placed in their merit, coming from this well-known firm, and should commend themselves to all physicians. We refer for more specific information to the card on page xiv.

CHOLERA IN FRIEDREICH'S ASYLUM, HAMBURG.

In a letter from Dr. Reye, Medical Director of the Asylum, some interesting facts relative to the cholera epidemic in this famous institution are detailed and are of importance.

There were 1,500 patients in the asylum; 123 were taken with cholera; 64 of these died.

Hamburg has a population of 650,000. At the time of the epidemic, up to September 21, there were 15,000 cholera patients; of these 6,000 died. Of the asylum cases, 34 were females. Of the officers of the institution, only 2 males and 2 females were attacked. Only one nurse died. All the other officials and their families and the pay patients were not attacked.

Up to September 21st no new cases appeared.

It will be observed that the mortality was greater in this institution than in all the cases collectively of Hamburg.

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CHAS. HENRY BROWN, M.D.,

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DECEMBER, 1892.

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Note Relative to the Buffalo Lithia Water.

WILLIAM A. HAMMOND, M.D., Washington, D. C.

Surgeon-General U. S. Army (retired), formerly Professor of Diseases of the Mind and Nervous System in the University of New York, etc.

There is a point in relation to the therapeutical efficacy of the Buffalo Lithia Water which has not as yet, I think, received sufficient attention. It is well known that many cases of diseases of the nervous system are complicated with lithæmia, and that unless this condition is removed a cure is very often retarded and not infrequently entirely prevented. It is quite commonly the case that in cerebral congestion producing insomnia, nervous prostration resulting from over-mental work or much emotional disturbance, and in epilepsy (to say nothing of many cases of insanity) an excess of uric acid in the blood is often observed. This state appears to be altogether independent of the character of the food, for no matter how careful the physician may be in regard to the diet of his patient the lithæmic condition continues. I have tried to overcome this persistence by the use of phosphate of ammonia and other so-called solvents for uric acid, but without notable effect.

Several years ago, however, I began to treat such cases with Buffalo Lithia Water, with a result that was as astonishing to me as it was beneficial to the patient, so that now in all cases of nervous diseases under my charge, in which there is an excess of uric acid in the blood, I use the Buffalo Lithia Water in large quantities. By this I mean that I do not have the patient drink merely a tumbler or two in the course of the day, but that I flood him, so to speak, with the water, making him drink a gallon or even more, in the twenty-four hours. By this course the urine after a few days ceases to deposit uric acid crystals on standing, the morbid irritability of the patient disappears, the tongue becomes clean, the wandering pains in the head are abolished, and the system is rendered much more amenable to the special treatment which may be necessary for the cure of the disease from which the patient suffers.

I have tried carbonate of lithia dissolved in water in various proportions, but it certainly does not, in cases to which I refer, have the same effect as Buffalo Lithia Water.

WASHINGTON, D. C., January 25, 1892.

UNIVERSITY OF MARYLAND—SCHOOL OF MEDICINE
BALTIMORE, MD.

DR. WM. T. HOWARD,

Professor of Diseases of Women and Children in the University of Maryland, says:

After comparing the water of **SPRING NO. 1** with that of a very celebrated water

"Indeed, in a certain class of cases, it is much superior to the latter. I allude to the abiding debility attendant upon the tardy convalescence from grave acute diseases, and more especially to the Cachexia and Sequelæ incident to Malarious Fevers in all their grades and varieties, to certain forms of Atonic Dyspepsia and

All the Affections Peculiar to Women

that are remediable at all by mineral waters. In short, were I called upon to state from what Mineral Waters I have seen the greatest and most unmistakable amount of good accrue in the largest number of cases in a general way, I would unhesitatingly say the Buffalo Springs, in Mecklenburg County, Virginia."

Water in cases of one dozen half-gallon bottles, $5.00, f. o. b. here. For sale by all first-class druggists.

THOMAS F. GOODE, PROPRIETOR

BUFFALO LITHIA SPRINGS, VA.

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THE Journal OF Nervous and Mental Disease.

Original Articles.

THE EQUITABLE RESPONSIBILITY OF INEBRIETY.

By T. L. WRIGHT, M.D.,

Bellefontaine, Ohio.

THE word responsibility, from *respondeo*, signifies the state of being able to answer, or make good. It carries with it the idea of ability, character—as distinguished from the word *respondo*, which simply means to reply or answer, without the presumption of character or stamina.

I will not consider responsibility as it goes with human nature in all the several planes of that nature—moral, legal and religious, but will mainly employ the term as it may be associated with the popular significance of justice and fair play.

I say *inebriate* responsibility, because there is no settled responsibility for the acts of mere drunkenness alone. Drunkenness is a form of insanity, and is practically so recognized by the law; and "in insanity there can be no crime," says Judge Noah Davis. There is no definition of insanity, nor can there be. The *sane* cannot conceive the *insane;* and hence it cannot define the insane. It can only describe phenomena; but it is unable to point out the logical connection between the phenomena of insanity and their moving cause. Insanity is not subject to law. When, therefore, a crime is committed by reason of drunkenness, it is not strictly that identical crime that is the subject of inquiry and punishment, but it is the anterior and original act of getting drunk that is esteemed to be the actual crime. If a man gets drunk and commits no offence other than that, he is not usually punished. But if he does commit some other offence, then he is held responsible, and punishable for putting himself into a drunken state. The rule of responsibility for inebriates differs in civil from that in criminal cases. Our business is with the responsibility of inebriates for criminal acts.

"The law assumes that he who, while sane, puts himself voluntarily into a condition in which he knows he cannot control his actions, must take the consequences of his acts, and his intentions may be inferred."

The inquirer, upon reading this plausible and rather fair rule of law, is hardly prepared for the very next thing that he will hear (or see), namely: "therefore, drunkenness is no defence for crime." This is a *non-sequitur.* Yet it is heard from the bar, the bench, and the pulpit, and it rings and reverberates throughout the civilized world, as though it contained all the wisdom applicable to inebriate crime, and settled at once and forever the whole subject.

What class of inebriates is it that most frequently violates the laws of the land—and particularly those laws that relate to crimes of violence? Clearly that class that drinks the most immoderately, the most irrationally, the dipsomaniacal class.

Dipsomania is a mental disease. The convulsive or spasmodic drinking of the dipsomaniac is only one of the *traits* of the malady—showing that the insanity, no longer latent, has become active and raging. Magnan says: "The alcoholic excitement with which an attack of dipsomania terminates, should not be confounded with dipsomania itself, as it is a complication, not a symptom of it." Trelat also says: "Dipsomaniacs are patients who become intoxicated whenever their attack comes on." Other writers of note adopt these propositions as substantially correct. But who is the dipsomaniac? Always he is of the neurotic constitution. He is in a state of hypnotic automatism much of the time, not only when intoxicated; but the strong presumption is, that he labors under the same disability, very often indeed, at the very moment when he begins to consume alcohol in order to become drunken. This is inconsistent with the idea free will, or rational volition.

Drunkenness is not always, if it is ever, a factor or a part of dipsomania, but may be a consequence of it. The dipsomaniac cannot be assumed to be "sane;" and in drinking he does not "voluntarily" put himself in a condition in which he "knows" he cannot control himself. On the contrary, the dipsomaniac being insane, cannot control himself when—and before—he *begins* his ungovernable movements of intoxication. His drinking is one of a series of causes tending toward crime—the first one of which was formed in an insane mind; and for the existence of which the inebriate mind is totally irresponsible.

In the neurotic constitution, the condition called *trance* is not uncommon—and this is especially true in dipsomania. The hypnotic state is not recognized by its subject. He moves by *suggestion*, coming not only from the outside world, but also from memory and inward impulsion. He may suspect that he has suffered, by afterward seeing the effects of his unnatural state—as, strange localities, writings, and the like. But if there are no perceptible effects, neither himself nor his friends may suspect that he has been under hypnotic influence.

It is impossible for the inebriate to foresee this peculiar effect of alcohol, even should he be perfectly sane; and it does not seem fair that he should be held accountable for acts done by him when in the trance condition.

It is true that the uncertainties, imperfections, and necessities of human nature, make it incumbent on society to hold, within certain limits, even the insane responsible for criminal acts. Sometimes the presumed knowledge of right and wrong, abstractly, is made the test; or, whether the insane criminal knew that a particular act "was wrong," may be chosen to determine the measure of his responsibility. Nevertheless the assigned limits of insane responsibility are narrow, and often difficult to establish. It is probable that true dipsomania may sometimes be of such moderate intensity that it should not be excused from accountability for criminal deeds.[1] Again, the mental disease may be more severe; and grave *doubts* may arise as to the rightfulness of holding it responsible for inebriate misconduct. But there are instances wherein the violence of dipsomaniacal insanity is superlative; and there can be no question as to the injustice of exacting responsibility for its conduct. And now the scene of strife is reached, To distinguish accurately the truly responsible, the doubtful, and the wholly irresponsible among dipsomaniacs themselves, is the work in hand. In view of the facts of dipsomania, it seems unjust and untrue to declare that *drunkenness is no defence for crime.* In strict accordance with the legal maxim already cited, dipsomania does, in all cases, present a good *prima facie* defence for criminality. The reasonable mind, the sober mind of the dipsomaniac has nothing to do in deciding upon the probabilities of intoxication; for the intoxication of dipsomania is only one of a series of more or less insane movements, begun and carried on under the forceful suggestions of mental disease. As long as the insanity is latent there is no drunkenness.

The subject under discussion may be viewed in other lights. For example: In order to excuse responsibility for inebriate crime, there must be a morbid incentive, a judgment incompetent to pass upon conduct intelligently, and a defective will. The crave for drink is, in the dipsomaniac, the outcome of disease, and of unmanageable nervous distress. The powers of mind are overcome and dominated by a peculiar form of insanity; and the will, in all such contingencies is latent, or powerless. It must be borne in mind that the question here is not of the actual commission of crime, but it relates to the voluntary establishment of the criminal propensity through the act of drinking.

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[1] The facility with which the moral nature may "fall in" with the improper representations and motives exhibited in dreams, will serve as an illustration of the character of both mind and morals, sometimes seen in the mental wreck of insanity.

Similar considerations apply to the character of criminal responsibility in the *habitual* drunkard. In him, incurable physical degenerations have impaired the integrity of important organs. Structural degradations of the gravest import affect perhaps, the liver, or kidneys, or brain. These may serve as centres of irritation to the entire nervous organism; and to allay this, a crave for the lethal effects of alcohol may become overmastering. Here is the incentive to drink till the full alcoholic influence is established.

Degenerations within the brain materially interfere with sound judgment and rational discrimination. Here is incapacity to reason on the wisdom and the moral nature of conduct. Will, too, is inefficient and helpless, because the diseased appetites and impulses of the animal being are stronger than the determinations of rational choice—and they rule the life while reason slumbers.

The rigid responsibility demanded for so-called alcoholic crime should be somewhat mitigated in view of the fact that alcohol, *alone*, is rather infrequently the exciting cause of criminality. Recent intoxication is generally agreeable. The mind is elated and happy. It is mainly after prolonged inebriation that the surly and truculent disposition, often attributed to simple drunkenness, appears. Then it is that strange poisons other than alcohol have become present in the circulation. It is then that carbonic acid, urea, and other poisons not alcoholic oppress the brain, and force the mind into vicious thoughts and incentives. Under circumstances of this kind, alcohol should not be charged with the sole agency in the formation of the criminal nature; it is only one of many.

I might add, as an excuse for the establishment of the criminal mind through the alcoholic influence, this fact: In all enlightened countries whoever is licensed by the law to deal in alcoholic beverages is forbidden, in the permissive contract, to furnish liquor to insane persons and to habitual drunkards. Therefore, when these agents of the public do sell to dipsomaniacs, to persons intoxicated, and to those in the habit of getting drunk, the public should rightfully share in the accountability for the crimes of such drunkards. Society should enforce its own law, and compel the fulfillment of contracts made under it. By the very terms of the law affecting the liquor traffic, the State implies its complete knowledge of the incapacity of the dipsomaniac and of the habitual drunkard to control their own actions when intoxicated. Should not the State—that is, society at large—be responsible for the legitimate consequences of its own neglect? And in case of crime, should not the "intent" [of the State] to commit the crime "be inferred?"

In selling alcoholic liquors by law there is no escaping the fact that the State is the *principal*, and the seller is the *agent*. The principal is responsible for the acts of his agent. It is said to be a poor rule which will not work both ways. Whenever a dipsomaniac becomes inebriated, or a habitual drunkard is seen staggering under the influence of alcoholic liquor, it is manifest that the public has been violating its own laws. When the State will actively interfere to protect its own insane and sick *from themselves*, it will be time to discuss the interests and rights of society—as they may be jeopardized by the freaks of insanity and disease.

It will be remembered that the legal *dictum*, assumed to include all the contingencies of certain phases of inebriate responsibility for crime, presupposes:

(*a*) That the criminal was *sane* when he partook of liquor.

(*b*) That the act of drinking was *voluntary*, and

(*c*) That he *knew* he would, through that act, become unable to control his conduct.

Nothing, on a superficial view, could seem to be a more reasonable test of alcoholic responsibility. Yet it appears to be composed of plausible assumptions that are not fairly applicable to the facts of practical life. It contains a summary of essential prerequisites that cannot be made to operate in unison; for it is impossible to accurately measure the acts of inebriate life, by the rule of law as it has been formulated. But before entering more specifically upon the nature of inebriate responsibility, certain facts of general application may properly be offered for consideration.

When the material instruments of the mental and moral powers are, for a protracted reason, inhibited in function by the anæsthetic property of alcohol, great disturbances must ensue in the manifestations of mind and morals. Anæsthesia withdraws the nervous centres from spontaneous activity and compels the mind to assume that inferior plane of exhibition, which is merely imitative, habitual, automatic. It is impossible for a mind in which the sense of personality is wavering or destroyed to so establish its own relations with morality as to be capable of distinguishing accurately between right and wrong. To perceive what is right requires alertness and the intellectual power of clear discrimination. To recognize wrong requires the same mental properties, and also a sensitive condition of the moral faculties—which is quite inconsistent with the torpor imposed by alcoholic anæsthesia.

The questions often propounded in courts of law respecting the moral capacity of criminals are in substance these: "Could the man distinguish between right and wrong? Did he know when he committed the act that he was doing wrong?" These questions embody what the courts in England and America insist shall be a real test of legal responsibility for crime. But the power of discriminating between the fine shades of the moral qualities must be weakened when consciousness is defective; and it must be defective in some degree in every grade of anæsthesia. There is a distinction to be made between the purely rational process of discriminating as to the nature of moral qualities and the living and appreciative feeling of the same qualities. The knowledge of right, abstractly, and thorough reason only, and the knowledge of wrong, abstractly, may be present and yet the power of discriminating between the two, in a comparison or an analysis of the elements of right as relates to the elements of wrong, may be wholly absent.

Relevant to this subject are the words of Seppilli: "We must remember that cerebral activity is manifested under two different aspects—that of the conscient and of the inconscient. The conscient activity, or consciousness, is constituted of knowledge by the *ego* of its own acts. On the contrary, in the inconscient activity of the brain (called also automatism) all those actions enter, in which the *ego* takes no part, or is aware of any; but these latter are combined and directed so as to resemble those which the *ego* perceives, wills, and directs."

Here is explained the difference between responsible life and automatic life. In the former, the mind under consciouness directs, perceives, wills; while in the latter, conduct is a matter of habit, imitation, custom; in brief, automatism. Conduct directed by consciousness is amenable to the requirements of right and wrong; but it is not responsible when it is founded upon automatism. Yet the apparent features of these two phases, or lines, of mental existence resemble each other; or rather, the automatic life imitates and resembles the truly rational life.

The conclusion is that it is difficult, very frequently, to determine whether a criminal can discriminate between right and wrong. The semblances of automatism are so like those of conscious rationality that they disguise the actual incompetency of the moral powers. Habit and automatism are not under the supervision of judgment or will, and consequently they have little or, perhaps, no place in the formation of intelligent comparison or in the determinations of choice. They cannot act as arbiters in questions wherein the qualities of right and wrong are involved.

The "test" of a sensitive knowledge of right and wrong is, therefore, fraught with difficulties; and it may be liable to such interpretations as will confound the judgment respecting the motives and incentives which lead to criminality.

There is, then, a difference of opinion respecting the criminal responsibility that should commonly be exacted from drunkenness. The law, however, is pretty well established in its doctrines and decisions on the subject. J. R. McIlraith (Barrister at Law, London) says: "Hallucinations and illusions, which are common effects of drunkenness, do not seem to constitute insanity when so induced." Apparently different is a charge of Justice Stephens, namely: "If you think there was a distinct disease caused by drunkenness, but differing from it, and that hence he did not know the act was wrong, you will find a verdict of not guilty, on the ground of insanity."

Brierre de Boismont declares that: "The man who is convinced that he is surrounded by enemies whom he perceives before him and hears threatening him (through hallucination), will endeavor to injure them, to strike them, to kill them; and should he, through illusion, convert the persons of attendants into those of imagined enemies, the most disastrous results might ensue from this error. We are beginning to be aware that there are certain extravagant actions hitherto inscribed among the annals of crime which might be referred to insanity, and especially to hallucinations."

The law recognizes the fact that the man drunk is insane. There is actually, and founded upon the incontrollability of the mind in drunkenness, a remarkable legal inference (already referred to), to the effect that *drunkenness is no defence for crime.* True, this has the appearance of a strange inconsistency; for the law also declares that "where there is insanity, there can be no crime." The legal conclusion respecting responsibility for inebriate crime involves an assumption that may be disputed. "The law has settled that a drunken intent is just as guilty as a sober one." This may be settled as law, but it is not settled as fact. There is no pretence that the law has proven the equality, or even the similarity, of a drunken and a sober intent.

But the law claims that the drunken man is a "voluntary" madman; and this voluntary element is the core of the assumption as to responsibility. There seems to be in this assertion a contradiction in terms. A madman is supposed to be bereft of reason, not only as being mad, but as becoming mad. There is something beyond the bounds of rational conception in the idea of voluntary insanity; that is, insanity brought on by express purpose; as though, *being in a sound condition*, a mind would use its volition to destroy its volition. Such a use of will would be the act of a mind already insane. The assumption is a very questionable one, that a mind, being sound, ever voluntarily places itself in a situation in which it knows it will be unable to control itself.

The perfect mind cannot conceive of itself as being insane. The drunkard does not believe that he cannot control his actions when drunk—although he cannot. He knows nothing of hypnotism, nor of invading poisons, unexpected and unknown. The sober *ego* is wholly different from the drunken *ego*. The body is the same, but the minds are two. A sane mind may speak for another mind also sane; their faculties are on the same plane of consciousness, both by reason of possessing similar powers and by reason of a similar presentation of surroundings. But a sober mind cannot speak for itself as though drunken. The differing states of the mind cause it to act as two; and they can no more explain the motives and interpret the movements of each other, than a sound mind in one person can interpret the impulses of an unsound mind in some other person.

The following remark is made by a distinguished lawyer, the Hon. Clark Bell: "The medical view that irresponsibility should follow where insanity exists, has nowhere been conceded by the law."

Another legal writer declares: "A voluntary demon who has produced a condition in himself by his own act, which is not the disease known as insanity, is not excused."

There is objection to the formidable epithet, *voluntary demon*. There are no demons, voluntary or otherwise, wandering about—although there is no lack of bad men. The term was employed by Lord Coke in an age when evilly-inclined persons were presumed to come, through choice, under the guidance of certain vagabond devils. These individuals were supposed to be incapable of self-control, but responsible for their acts by reason of their chosen associations—in contradistinction to *lunatics* who, while incapable of self-control, were not responsible for their acts. *Voluntarius dæmon* simply signifies "a man who is drunk."

Lord Coke says: "As for a drunkard who is *voluntarius dæmon*, he hath no privilege thereby, but what hurt or ill soever he doeth, his drunkenness doth aggravate it." That drunkenness can aggravate the guilt of homicide, for instance, is a strange conceit. The man who deliberates and executes murder for purposes of robbery, is surely more guilty than the man who commits homicide in the haste and madness of a drunken frenzy, and without premeditation or criminal motive.

A case in Vermont is cited, wherein it is said: "Voluntary drunkenness will not protect a person from liability for torts or for crimes committed while in that situation." The reason given for this decision is to the effect that, as some one might pretend to be drunk and commit crime, in order to render such an excuse of no avail, punishment should be imposed on another who really does get drunk and commits crime. The language employed is: "In respect to torts, sound policy forbids that intoxication should be an excuse for crime; for if it were, under actual or feigned intoxication, the most atrocious crimes might be committed with impunity."

Why may not this doctrine be applied to insanity as well as drunkenness? By inflicting the death penalty upon insane homicides, an effectual stop would be put to the proceedings of those who feign insanity in order to commit murder.

Judge Hale says: "By the law of England such a person shall have no privilege by this voluntary contracted madness, but shall have the same judgment as if he were in his right senses." "If, indeed," says Holroyd, J., "the infuriated state at which he arrives should continue and become a lasting malady, then he is not amenable." It would be worth while to state at what period of time the temporary madness merges into the permanent madness; and, also, what is the abstract difference between their capacity of responsibility.

Remarkable nervous conditions sometimes become epidemic. They are largely confined to persons of uncultivated and superstitious minds. They may evolve delusive beliefs, leading to the most serious consequences; or they may, through illusion and hallucination, so impose upon the senses and imagination as to supplant rational perception and right judgment.

The following incident is abridged from Brierre de Boismont. "In Germany certain superstitious people believed that ghosts of slain troopers were seen from time to time in the night. They were said to appear in uniform and on horseback, and caused great consternation among the peasantry. Two laboring men, fatigued with work, were seated and partook of some wine they had with them. They became much intoxicated and excited by drink, and imagined they were surrounded by Swedish cavaliers. They carried sticks with them, as was their custom, and thinking they were battling with the Swedish horsemen, they began to strike and knock each other, until one of them disappeared. The other, taking up his friend's hat and thinking it was a helmet of the enemy, carried it in triumph to the home of his companion, who, he thought, had gone before him. As he approached the house, he cried out: 'The devils wanted to take me away, but I gave one of them such a dressing with my stick that they will not come again.' He had in reality killed his companion by a blow on the back of his head, fracturing his skull.

"The next day, filled with grief, all he could say was, that having continued to drink with his friend, it seemed to them that they were surrounded by spectres on horseback, in their blue and red uniforms; and being convinced that evil was about to happen to them, they resolved to defend themselves with their sticks; that they both attacked the spectres, having heard that when fearlessly confronted they would betake themselves to flight. In the midst of the struggle he missed his companion, and the spectres seemed to have disappeared."

This case was referred to the legal faculty at Helmstadt. The decision was that—"If any one becomes voluntarily intoxicated, and in this state commits a crime, he must be responsible for it, for the loss of reason was due to his own act."

The criticism of Boismont on this legal decision is: "If at the time and in the country where this event took place, the doctrine of hallucinations and illusions had been better understood, and the power of those which accompany drunkenness more fully appreciated, the punishment would have been less severe." The accused was sentenced to ten years hard labor.

Respecting the criminal responsibility of the man who drinks from mere idleness and without any driving neurotic stress, and who is free from congenital and from constitutional defects—the latter arising from disease or injury—and who is free from the physical degenerations of habitual drunkenness, no doubt the rules of accountability should be strict. But even in such instance, principles of responsibility should not be "lumped," or generalized. The effect of alcohol is so modified by special nervous sensibilities and peculiarities, that it is the right of every individual guilty of inebriate crime to have his trial made a *special* one. He is entitled to a full inquiry respecting the facts that pertain to himself alone.

VIBRATORY THERAPEUTICS.—THE APPLICATION OF RAPID AND CONTINUOUS VIBRATIONS TO THE TREATMENT OF CERTAIN DISEASES OF THE NERVOUS SYSTEM.

BY PROFESSOR J. M. CHARCOT.[1]

THE first tentatives of the method of what I wish to speak to-day: *The treatment of certain diseases of the nervous system by mechanical vibrations*, go back to 1878, and originated with M. Vigoroux. This physician first watched the effects of mechanical vibrations on a certain number of hysterical patients. An enormous tuning-fork, mounted on a sounding-box, was set in action by means of a bow. Thanks to this agency, Vigoroux succeeded in dispersing the hemianæsthesia and causing the cessation of the contractures almost as rapidly as with the magnet or electric spark.

In a case of locomotor ataxia, he succeeded in subduing the painful crises by placing the legs of the patient in the sounding-box. In short, a certain number of experiments, repeated at different times, showed that the vibrations of a tuning-fork have exactly the same physiological action as the metals, the magnet, and static electricity.

Although the following year Schiff arrived theoretically at the same conclusion, these researches were not followed up. It was not till 1880 that Boudet, of Paris, took up the question again and obtained important results. His article "On the Treatment of Pain by Mechanical Vibrations" was published in *Progrès Medical*, February 5, 1881.

This electrician studied especially the vibrations in their local effects in the treatment of neuralgias. He made use of a tuning-fork, electrically mounted. To the little board serving as support for the instrument, at the point where the vibrations are most intense, he adapted a thin copper rod, of ten centimeters, terminated by a small disk. This disk was applied to the part of the body which it was intended to influence by the vibrations; and in order better to localize the latter, the disk was made to end in a rather blunt point.

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[1] Translated by E. P. Hurd, M.D.

The vibrating rod applied to any part whatever of the body of a healthy subject produced quite rapidly a local analgesia, and even a very marked anæsthesia, during from eight to twenty minutes. The effects were the more prompt and complete: 1. The nearer to a sensory nerve the vibrations were applied. 2. The less thick the dermic tissues and the more resistant the planes on which they reposed. The maximum of effect was obtained on the face, and in particular on the forehead, on the gums, etc.

In this way he was able to cure quite promptly some severe neuralgias, facial neuralgia, in particular, very intense migraines, very frequent vibrations being required. He claims to have cured himself by this process of an attack of migraine of great severity.

"When," he says, "the instrument is applied to the face, the cranium vibrates, and the subjects thus treated experience either a commencement of vertigo or a very marked disposition to sleep."

Shortly after the publication of this article, Dr. Jennings, of England, published in *Progrès Medical* a letter, in which he claimed the priority of this mode of treatment for Dr. Mortimer Granville, of London, who, he affirmed, had been for four years treating pain in the same way, and had even invented an instrument for this purpose, the "percuteur," which had been, moreover, experimented with in the hospitals of Paris with a relative success. Boudet replied to this letter, but did not continue his researches in this direction.

Mortimer Granville, on the contrary, published in 1883 the results which the vibratory method had given him in the treatment of certain diseases of the nervous system.[2] The process which he employed did not differ materially from that of Boudet, of Paris. Like the latter, he proposed always to act locally. The mechanism of his "percuteur" was much like that of clock-work, consisting of a simple train of cogged wheels worked by a spring, and acting on a lever which carried an ivory hammer with an indicator to show speed, and a screw movement to control it. The results obtained by Granville were remarkable, particularly in facial neuralgia; but the triumph of the "percuteur" was especially seen in neurasthenia of cerebral or spinal form, and in migraine.

I have mentioned these methods of treatment on account of their general interest, and because I shall have to refer to them again in the course of this clinical lecture.

I had long been told by patients affected with paralysis agitans that they derived great relief from prolonged journeys by railroad or in carriage. During their journeyings, the painful sensations which they had been in the habit of feeling seemed remarkably to undergo mitigation, and the benefit persisted for some time after the journey was over.

I had many times pointed out these facts to my pupils and had suggested the possibility that good effects might be obtained in Parkinson's disease by communicated movements similar to those of a carriage in motion, when a gentleman in the audience, Dr. Jégu, promised to devise an apparatus that should realize these desiderata. Aided by a distinguished engineer, M. Soligny, he constructed an arm-chair provided with a special mechanism which communicated rapid movements of oscillation around an anterior and lateral axis. These movements, combined and opposed, produced a trembling movement very much like what you experience when riding on the seat of an open wagon, as you can judge by sitting in this arm-chair.

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[2] Nerve Vibration and Excitation as Agents in the Treatment of Functional Disorder and Organic Disease. London: Churchill, 1883, in 8vo, 128 pages, with fig. The first article of Mortimer Granville appeared in the Lancet, February 19, 1881, page 286.

After completing his apparatus, Jégu made several trials at the Salpêtrière. Unfortunately his death, which happened about then, interrupted them; but at my request my former clinical chief, Dr. Gilles de la Tourette, has consented to continue the experiments of Dr. Jégu. These experiments have thus far pertained to eight subjects: six men and two women.

Without attempting to analyze one by one the results which have been obtained, I think that we can nevertheless have a fair understanding of the *modus operandi* of this treatment. The amelioration generally begins to be felt by the fifth or sixth séance of trepidation. It pertains especially to the painful phenomena which so often accompany paralysis agitans.

As soon as he comes down from the trepidant-chair, the patient feels lighter; his stiffness is gone; he walks with more ease than before. An almost constant phenomenon—the nights become good; the patient, who before was agitated incessantly in his bed, sleeps a quiet sleep, which brings him great satisfaction. Save in one case, the trembling has not seemed to be much influenced.

This *bien être* is experienced especially on the day of the treatment; hence the necessity of having séances daily. Unfortunately, this is difficult at the Salpêtrière, for the mechanism of the trepidant-chair is set in operation by an electric motor, and it is necessary to reserve three times a week the electricity which it furnishes to work the static machines. Moreover, the séances have not perhaps been sufficiently prolonged. In fact, it is difficult when we have so many patients to treat to give to each one more than a quarter of an hour. We hope soon to be able to do better. However this may be, the results obtained have been very encouraging; the trials will be continued, and I shall have occasion to speak to you of them again.

It is already no small gain to be able to relieve the sufferings of the victims of paralysis agitans, a disease on which ordinary remedies act with little efficacy, as you know.

My clinical chief did not limit himself to watching the action of the *trepidant-chair* in Parkinson's disease; he has sought for other applications of the vibratory method.

Struck by the results obtained and described by Boudet, of Paris, and Mortimer Granville, having remarked that the first of these writers had advanced the hypothesis that the local vibrations communicated to the face diffused themselves thoughout the entire cranial covering and set the cerebrum in vibration, he caused to be constructed by two electricians, M.M. Larat and Gautier, assistants to M. Gaiffe, an apparatus destined to impress upon the cranium intense vibrations.

The apparatus is made thus: It is composed of a sort of a helmet with separate concentric laminæ, very similar to the oval "conformator," formed of mobile pieces, which hatters use to take the measurement of heads. By the aid of a simple artifice the mobile pieces or laminæ of this helmet exactly fit the head of the subject under experimentation. The helmet is surmounted by sort of flat tray, on which is placed a little special motor made to work by an ordinary battery. All the apparatus is easy to manage, very easily worn, and its machinery can be kept going without interruption and without fear of derangement. The little motor makes about six hundred turns a minute, all very regular, producing a uniform vibration, which is transmitted to the cranium in its totality by the intermediation of the mobile pieces of the helmet. The whole cranium vibrates, as you can assure yourself by placing the hand on the mastoid process.

The apparatus when working gives out a continuous sound, a sort of gentle buzzing, which it is not perhaps indifferent to note from the point of view of the pathogeny of the results obtained. One can at will augment or diminish the number and the amplitude of the vibrations by a very simple regulator.

This vibrating helmet placed on the head of a healthy subject is perfectly well borne, and its working does not cause any inconvenience. At the end of seven or eight minutes the subject has a sensation of torpor (*engourdissement*) which invades the whole body and almost invariably leads to sleep. In fact, experiment has shown that a séance of ten minutes, made about six o'clock in the evening, procures a calm sleep on the corresponding night. Eight to ten séances triumph over *insomnia* when this is not dependent on an organic affection of the encephalon.

In three cases, the vibration proved to be very efficacious in aborting attacks of migraine. This was exactly the experience of Boudet, as before stated.

Three persons affected with *neurasthenia* were treated in this way; two got well; the third gave up the treatment while making a decided improvement, though not yet cured.

The vibration acts by causing disappearance, first, of the cephalic symptoms, in particular, the vertigo and the tight-bound feeling, the oppression so special to this affection. What favors the view that the vibrations make their action felt particularly on the encephalon, is that in one case when the spinal symptoms were predominant, the sacral tenderness, the weakness of the lower limbs, the relative sexual impotence disappeared without the need of resorting to vibrations along the vertebral column. In this case, static electricity had completely failed.

It is not, then, doubtful that the vibration thus practiced is a powerful sedative of the nervous system.

We know that alienists have long been in the habit of using in the treatment of certain forms of mental alienation trans-cerebral currents of low intensity, and it is quite conceivable that the rapid vibrations propagated to the encephalon may induce salutary modifications. In one case of *melancholic depression* very favorable results were obtained, and the vibration seemed to have arrested the course of an attack, which at the time when treatment was commenced did not show any indication of retrocession.

I cannot further pursue the subject at present; for the experimental trials, as you see, are but just under way;. but what I have pointed out to you is sufficient to show you the advantages which may be derived from *vibratory medicine.*

THE TREATMENT OF NEURASTHENIA BY NERVOUS TRANSFUSION.

Constantin Paul, following out the idea of Brown-Sequard, is establishing an analogous plan of treatment, by making use of a transfusion of nervous matter to combat neurasthenia. In order to do this, he takes a certain quantity of the brain of a sheep recently killed, macerates it in glycerine, filters in D'Arsonval's apparatus; that is to say, in a porcelain filter, through which the liquid passes under 40 to 50 atmospheric pressures of carbonic acid gas. The liquid thus obtained is a solution of the nervous substance, of about 1 to 10, which will keep for nearly ten days without alteration. He makes injections under the skin of about 4 or 5 c.c., which is repeated four or five times daily. After an injection, the patient experiences a feeling of *bien faisance*, and as yet the author has seen no untoward results follow. He has treated, in this way, three cases of neurasthenic chlorosis, three of ordinary neurasthenia, a like number of tabes dorsalis, and a case where the only symptom seemed to be a chronic condition of slow pulse. The first-named cases were cured completely, the ataxics were very much benefited, insomuch as the fulgyrating pains disappeared, and the gait was re-established, and in one of the cases indeed the reflexes returned; in all the amelioration was considerable. In speaking of the nature of neurasthenia, the author compares the nervous system which allows of its manifestation as an accumulator which needs charging, and that the transfusion of the before-mentioned nervous matter fulfills this "long-felt want" (Jour. de méd. et Chirurg., March 10, 1892). J. C.

A CASE OF SO-CALLED "ASTASIA-ABASIA."

By MORTON PRINCE, M.D.,

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THE following case[1] is reported as one of astasia-abasia because, although this phenomenon in this instance is only a symptom of some deeper underlying process, the paucity of other symptoms renders it impossible to more than surmise what this underlying process is.

The difficulty in standing or walking, which is the salient and almost sole symptom present, is very marked and so peculiar as to at once arrest the attention of the observer. It is apparent at once that the difficulty is very different from that due to the more common types of disease. The motor phenomena have changed somewhat during the last month or two since he first came under observation, but there is no improvement in his ability to walk. The patient stands with some difficulty without the use of crutches, and without these aids he cannot walk at all. It is difficult to make out exactly why he needs the crutches while standing, as he does not sway or totter or appear to be unable to support his weight, but he seems to feel insecure and to be afraid that he will fall. When he attempts to walk he at first finds a difficulty in raising his feet at all from the floor, but when he succeeds in doing so, each is raised and replaced rapidly in a sort of rhythmical trepidation, much as if he were doing a movement in a clog dance, excepting that his toes only strike the ground, or as if he were imitating the rapid revolution of the wheels of a locomotive on a slippery track, to use the expression with which Dr. Knapp described the peculiar action of his patient. In fact, I had an opportunity to see Dr. Knapp's case, and these peculiar movements were much the same in both cases. It was much more marked in my case a few months ago than it is now, though it can be distinctly seen in a slighter form at present. Without crutches the patient cannot propel himself forward at all. With crutches he succeeds in doing so. When progressing by the aid of these, the body of course is carried forward, and the legs follow by force of gravity, but seem to be alternately seized with this spasmodic contraction of the muscles as if this same trepidation were being attempted, the heels are drawn up from the ground so that the weight is supported on the toes. This is particularly true of the right foot and leg, which are the worst affected. This drawing up of the heels is also now less marked than it was. When he stands or walks the muscles seem to be in firm spastic contraction, but whether this is due to a real spasm or is only necessary to retain the equilibrium it is difficult to make out. His greatest difficulty in walking at present seems to be due to the impossibility to so co-ordinate the muscles of his locomotor apparatus as to alternate the movements of his legs. He describes the difficulty as if his legs were weak, but it is not apparent that they are so. The muscles of the body seem also to be involved in the lack of co-ordination, as when lying on the bed he has great difficulty in moving himself down toward the foot. While lying down, however, he can with ease flex and extend each leg alternately, and with great strength, showing that there is no difficulty in voluntarily controlling the muscles of his legs for other purposes than locomotion. It is difficult to make out whether or not he can crawl on all-fours, as he objects to the movements on account of some tenderness of the knees.

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[1] I am indebted to Dr. D. S. Harkins for the opportunity to examine this case, as well as for many of the notes which he kindly made for me.

A peculiar feature about his walking is, that by an ingenious device he can circumvent, so to speak, the obstinacy of his legs, namely, by dragging a chair with him and every two steps resting his right knee on it as if it were a wooden leg. In this way he is able to progress quite rapidly. After momentarily resting his weight on the chair, he takes the leg off, and with this leg (the right) takes a step, then another step, quite naturally and easily, with the left leg, then draws the chair forward and again rests his right knee and weight upon it. The same process is then repeated over again. All this is done quite rapidly, and he is able to move about the room with considerable dexterity. The two steps taken in this way are made quite naturally. He does not seem to be able to take three steps. He says that at night, after supper, he is frequently able to walk naturally half a dozen times up and down the room. This has not been observed though by either Dr. Harkins or myself.

The remainder of the examination is practically negative. There is no tremor; the knee-jerks and the deep reflexes are normal. No paralysis; no affection of the arms; no ataxia; no disturbances of sensation excepting that he states he has a sensation of heat from knees to toes on both legs. This is not constant; also he has what he terms rheumatic pains, from time to time, in shoulders and knees and in "backs of legs." There is also hyperæsthesia in both feet, from ankles to toes, due to his feet having been frost-bitten about two years ago. Muscular sense is normal; vision, hearing and pupils are normal. Muscular development good; no atrophy.

The patient thinks at times the muscles of the right calf are affected with cramp, and Dr. Harkins noticed that these muscles are at times rigid. He has also noticed a spasmodic twitching of the calf muscles when attempts are made to walk. Pulse 74 to 78 and irregular; no cardiac murmurs; muscles react to galvanism and faradism, but fine quantitative tests were not made.

The history of the case is as follows: He is a man seventy-three years of age, and twice a widower. He has had six children, all of whom are dead. One died, aged thirty; cause unknown; two died between ten and twenty, of phthisis (?); three died in infancy. Patient has no knowledge of any disease having been common to all the children. His father was killed by an accident at thirty years of age. His mother died of old age, aged ninety years. Patient had chicken-pox when a child, and slow fever twenty-three years ago. Trade is that of a laborer; habits, good; drank very little; smoked a little. No specific history. His present illness dates from November, 1890. It came on in this way: When apparently in good health he would be taken, while walking in the streets, suddenly with "weakness," or stiffness of both legs, which would prevent his walking. These attacks would last a few minutes and then would pass off. They gradually grew more frequent and more prolonged until the condition became continuous and the present disability established. Has been obliged to use crutches since August, 1891, although he could walk without them until the first of this year. Has never fallen. His mind seems to be clear, but in talking he expresses himself only in very short, jerky sentences, so that he does not give complete and satisfactory answers except to continuous cross-examination.

Remarks.—It is almost impossible to describe the peculiar difficulty in walking and standing presented by this case so as to give the same impression which one would obtain by actual observation. One thing was evident, and that was an almost complete dissolution of the locomotor mechanism, so that the movements of the legs could not be co-ordinated for this one particular act. The trunk muscles also probably took part in this dissolution.

Secondly, the normal, rhythmical co-ordinated contractions of the muscles seem to be replaced by tonic and clonic spasms, the former holding the legs firmly in position and drawing up the heels from the ground, and the latter causing the peculiar trepidation already described. There is little doubt in the writer's mind that these phenomena are symptomatic of some organic disease. The peculiar facial expression and the jerkiness and monotonousness character of the speech were very suggestive of paralysis agitans. The tendency to walk on the toes also resembled, in an exaggerated degree, the same peculiarity of that disease. The absence of all other symptoms would, however, make this diagnosis problematical. But I am inclined to take the risk of predicting that the case will, eventually, turn out to be of this nature. Knapp's case, lately reported in the JOURNAL OF NERVOUS AND MENTAL DISEASE, it will be remembered, was thought to be of this nature. There was something about the present case that, at first sight, was suggestive of Thompson's disease, but the rigidity on attempting to walk did not pass off, and this, together with the affection of the speech and facial muscles, would seem to exclude it. Beyond this there is little to be said.

THE BRAIN IN POST-HEMIPLEGIC CHOREA.

"Médecine moderne," January 14, 1892, contains Fränkel's recent remarks upon the post-mortem condition of the brain in a subject who during life suffered from a mixed form of chorea and athetosis following hemiplegia. There are several distinct kinds of post-hemiplegic tremor, the first resembling paralysis agitans; the second, an intention tremor; the third, hemichorea; and the fourth, athetosis. Charcot confounds these last two forms, and attributes the symptoms to a lesion of the internal capsule. Others regard hemichorea as the outcome of a lesion in the optic tract or the pyramids, and look upon athetosis as due to abnormity in the convolutions. The specimen presented showed the brain of a man in whose family chorea had less of common occurrence. An apoplexy, ten years earlier, had been followed by left-sided paralysis. Five years from the attack, chorea appeared at intervals, diappearing completely for a time. When brought to the hospital the patient suffered from mitral insufficiency and hemorrhagic nephritis, together with tremor combining characteristics of chorea and athetosis. For a time he improved; but in about three months general paralysis and aphasia set in, and death shortly afterward ensued. The autopsy revealed extensive atrophy of the cerebral convolutions, attributable to syphilitic enarteritis of the cerebral arteries, particularly the basilar artery which contained an extensive thrombus and the middle cerebral. L. F. B.

OTHÆMATOMA.[1]

BY MATTHEW D. FIELD, M.D.

OTHÆMATOMA—hæmatoma auris (insane ear)—asylum ear. Under the term othæmatoma several distinct diseases have been described, and on this account much confusion has arisen.

Hæmatoma auris—perichondritis auriculæ—cystic formation and tumors of the external ear. It is well to first describe these diseases with the points of differential diagnosis.

Dr. Frederick Bird, of the Asylum of Sieburg, was the first to call attention to hæmatoma auris in the insane, in 1833. Since then many observers have reported cases occurring in the sane and insane. As observed in asylum cases, its advent is usually preceded by active congestion. "Both ears, or one of them, are hot, red and swollen; gradually the ear becomes hotter, redder—almost blue" (Bird). "Preceding the appearance of the tumor we find that one, or, in rare cases, both ears become red and swollen, while at the same time the face and eyes give evidence of a strong determination of blood toward the head; occasionally, however, the redness is absent, and the skin maintains its normal color, while the tumefaction appears due to a slight œdematous condition of the auricle.

"In the course of a period of time, ranging from a few hours to several days, an effusion of blood takes place and the malady attains its full development. The tumor occupies the auricle of the ear and projects from its concave surface. The tumor may remain for a longer or shorter time in *statu quo,* after which it may either undergo spontaneous rupture, or may be gradually absorbed. If rupture takes place, or if the tumor be punctured, there is a large escape of blood, mixed with sanguinolent serum, and by the introduction of a probe may satisfy ourselves of the existence of a very considerable cavity.

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[1] Presented to the American Neurological Association, at New York, June 22, 23 and 24, 1892.

"May terminate in an exudation of plastic lymph; uniting the wells of the cavity and causing its obliteration, leaving an indurated mass, which subsequently contracts and produces a strange and characteristic deformity" (Hun). There is little doubt but that these sanguinous tumors are composed of blood affused, not under the skin, but beneath the perichondrium, detached from the cartilage. The perichondrium thus detached contracts in proportion as the blood is reabsorbed, carrying with it in its retreat the other portions of the pavilion, which accounts for the deformity. The perichondrium admits upon its inner surface a newly-formed cartilage, which constitutes sometimes a layer united to its entire surface, sometimes independent islets more or less distinct from each other. These productions are the cause of the thickening of the ears which have been affected by sanguineous tumors (Foville). W. Phillemore Stiff divides the diseases into four stages: 1. Hyperæmia, and probably arteritis. 2. Effusion. 3. Cystic stage. 4. Permanent induration.

Upon section of the cartilage in an old case there was no appearance of a cyst; and under the microscope was observed to consist of hypertrophied cartilage and intercellular matter. In some parts the cartilage was converted into true bone containing Haversian canals (Toynabee). C. W. S. Cobbald found bone-cells and Haversian canals, but no arrangement, and concludes that the perichondrium is separated and secretes or develops new layers of cartilages.

Samuel Wilkes also states that in old cases bony deposits have been found. The perichondrium and subcutaneous tissues of the auricle often show a deposit of urate of soda in gouty people, and that this is worthy of notice, for it may be useful in diagnosis.

Probably the best description of perichondritis auriculæ is by Knapp, which is given here in his own words: "The majority of authors mention the inflammation of the perichondrium under the head of othæmatoma, with which, by Kramer and others, perichondritis auriculæ is used as a synonymous term. The description then unfolds the well-characterized picture of the hæmatoma auris. With this the idiopathic inflammation of the perichondrium of the ear should not be identified. I remember having seen only three cases of perichondritis auriculæ, of which only one showed the disease in all its phases. It was as follows: H. A., aged sixteen, had always enjoyed good health. Presented himself complaining of a moderately painful swelling in his right ear, which he had noticed a few days previously. His ears had never before given him any trouble, and he could not ascribe the present difficulty to any cause.

"The swelling was most pronounced on the anterior lower part, where also fluctuation was discovered. The case was entered as furancle of the external meatus, and the fluctuating part was opened, evacuating, however, not creamy, but watery pus. A week later the swelling in the canal had diminished, but the lower part of the concha was red, swollen, and indistinctly fluctuating. After three days the swelling in the concha had increased, showed distinct fluctuation, and was moderately painfnl on pressure. It was opened, and again watery pus escaped. Four days later the swelling filled the whole concha, was dark red, and had a doughy feel. I opened it above the lobule, which was unaffected, and let out as before a viscid fluid, with denser yellowish flakes. A probe, introduced through the opening, could be pushed more than half an inch upward. The cartilage felt hard and uneven; the perichondrium was detached from it, and could, together with the skin, be easily raised by the probe. The swelling crept slowly and steadily over the whole anterior surface of the auricle excepting the lobule. In some places it was diffuse, in others nodular and fluctuating. These places were always lanced, and the same thin viscid pus came out; as on the first opening, never any blood. In the fourth and fifth weeks the helix and posterior surface of the auricle were swollen, but did not fluctuate. At the beginning of the sixth week the swelling had attained its height. From the sixth week the swelling began to subside, first in the cartilaginous portion of the meatus, then in the concha, then on the posterior surface, which had been free from suppuration, and gradually all over the auricle.

"The whole misshapen auricle was pressed against the skull and measured scarcely two-thirds of its natural size. Only the lobule escaped the deformity. The whole inflammatory process lasted ten weeks."

Dr. Knapp adds: "I have seen a few cases of hæmatoma auris, but they were in the first stages, totally different from those under consideration. The swelling was markedly round and dark-blue, and on incision dark blood was evacuated. They ran a slow course, showing hemorrhagic swelling in the neighborhood of the first intumescence, which led to temporary sero-purulent discharge and permanent deformity of the auricle. The later stages were also evidently of an inflammatory nature. They occurred in sane people and were not attributed to any injury."

Dr. Pooley shortly afterward reported a case very similar to Dr. Knapp's. The patient was a married woman, aged twenty-one years; the disease was situated in the right ear and seemed to have followed a boil. There was no traumatism or other assignable cause. The course was slow, and deformity resulted.

The tumor was incised and a thin, glairy-looking fluid was evacuated. No blood escaped. Dr. Pooley concludes his report thus: "I think with Dr. Knapp that this disease ought to be considered as an independent affection, and not confounded with hæmatoma auris, whether idiopathic or traumatic. It seems, too, that inflammation of the perichondrium can be either idiopathic or traumatic, but that the former occurs the more frequently. It is not a difficult matter to make the differential diagnosis between hæmatoma and perichondritis."

Dr. Pomeroy publishes "a case of multiple abscess of the auricle resulting in partial destruction of the cartilage, developed from a middle and external otitis and somewhat resembling an othæmatoma." That was undoubtedly a case of perichondritis. The course of the disease was very slow, and when the swelling was opened, pus was found, but no blood. Dr. Pomeroy observes: "I am of the opinion that these abscess depend on a perichondritis." Permanent deformity resulted.

Dr. Buck "reports three cases of perichondritis auriculæ without injury. Two of his cases followed frost-bite. Dr. Roosa adds one case in his practice that followed abscess of the meatus and was due to extension of inflammation.

Kipp reports a case of "spurious othæmatoma from a burn." Both ears were affected, and the case was identical with the one reported by Dr. J. H. Smith, where both ears were the subjects of perichondritis, the result of a burn. Hartman once observed a case of perichondritis auriculæ after a burn. In looking over the literature of othæmatoma I have frequently seen these cases cited as cases of hæmatoma auris occurring among the sane. Hartman reported two cases of cyst formation in the auricle, and adds that this led him to examine the cases already reported, and says: "I made the surprising discovery that all these cases have been improperly (as I hope to show) described as hæmatoma. In both cases, accordingly, the tumor had developed slowly without manifesting any signs of inflammation. One had existed three weeks at the time of the incision, the other, fourteen days. In the first case the swelling reached its maximum in about eight days; in the second, there was a steady increase in size up to the time it was incised. In both the contents were a clear fluid, without any discoloration from blood or any admixture of flocci. As no trace of blood was seen, I became convinced that I had to deal not with an effusion of blood, a hæmatoma, but with a primary cyst formation." The characteristic point of differential diagnosis between othæmatoma and cyst is contrasted in the following table given by Hartman:

	OTHÆMATOMA.	CYST.
Age.	Appears at an advanced age.	At middle age.
Constitution.	Affects cachetic subjects and the insane.	Affects the robust and healthy.
Etiology.	Originates almost exclusively as the result of traumatism.	Conditions which favor it, not known.
Mode of development.	Tumor appears suddenly.	Growth gradual.
Symptoms.	Inflammation with pain.	No inflammation; no pain
Contents.	Blood.	Serum.
Mode of healing.	Deformity as a common result.	No deformity.

As for the relation between cyst and perichondritis of the auricle there is this difference, that inflammatory phenomena are altogether absent in the cases of the cysts, whilst perichondritis is accompanied with redness, heat, and severe pain. The contents of the swelling in perichondritis are frequently similar to those found in cysts. yet they generally have an unclear, purulent character from the admixture of pus corpuscles.

It is very apparent that both hæmatoma auris and perichondritis may cause resulting deformities that resemble each other if not identical. The causation may not always be apparent. It is also to be observed that the assigned cause is apt to vary very materially whether the writer be an alienist or an otologist. By the alienist it is generally believed that the frequent occurrence of this condition among the insane is due to trophic changes, and the experiments of Brown-Sequard and Claude Bernerde are cited as throwing light upon these cases. A few observers have held that though there might have been a predisposing or susceptibility existing, yet the most prominent cause was external violence. The larger number of cases reported seems to have occurred on the left side, and this fact has been urged by the believers in traumatic origin of the trouble to be due to the fact that a blow received from a right-handed person would be most likely to fall, for mechanical reasons, on the left side of his antagonist; while those holding the opposite view have accounted for this upon the ground that the left carotid artery is nearer the heart, and comes directly from the aorta, and therefore there is a more powerful circulation on the left side of the head than on the right.

Statistics seem to indicate that it occurs more frequently among males than females. Hun, who reports twenty-four cases from the records of the State Asylums at Utica, found twenty-three males and but one female.

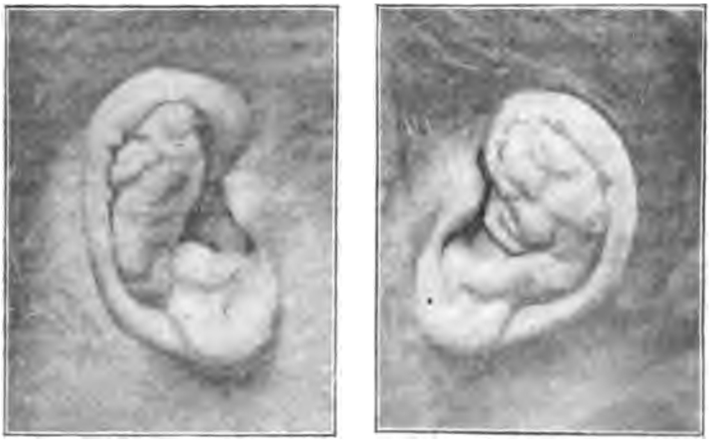
Dr. Dent, of the New York City Asylum for females, wrote me sometime since, that he had nineteen cases in the asylum, sixteen unilateral and three bilaterals; this was out of a total of 1672 female patients. Dr. Dent believes that hæmatoma occur more frequently among females than males, and places the ratio as five to three. This condition is generally looked upon as a grave complication when occurring in the insane. Hun remarks that it accompanies those forms of insanity that are essentially chronic or incurable, and consequently its presence indicates a very unfavorable prognosis.

W. Phillmore Stiff says, it must be concluded that the presence of hæmatoma adds to the gravity of the prognosis of the mental disorder. Foville writes: "All authors agree that, with few exceptional cases, they (hæmatoma) only appear in incurable cases, or at least signify the passing of their disease from the acute to the chronic stage;" though he afterwards remarked that although this specices of tumor is more frequently observed in the insane it is not exclusively confined to this class of patients.

Few cases of recovery among the insane are reported. Dr. Carlos MacDonald, in the JOURNAL OF NERVOUS AND MENTAL DISEASE, for February, 1887, reports one case with recovery of the mental condition, and he also quoted three others that had been previously recorded: one by Dr. Van Deusen, in this country; one by Dr. Teats, of

Coton Hill Institution; and one by Dr. Needham, of the Boothan Asylum.

Kiernan reported three cases of recovery; but Spitzka remarks, in his work, " It is significant that regarding the three recoveries which Kiernan observed among forty-eight patients with othæmatoma, that author in a copy of his paper sent the writer, two years subsequent to its publication, inserted marginal manuscript notes to the effect that all three patients subsequently returned to the asylum, one as a paretic dement, a second dying in an attack of raptus melancholicus, and the third as a (probably) periodical maniac."

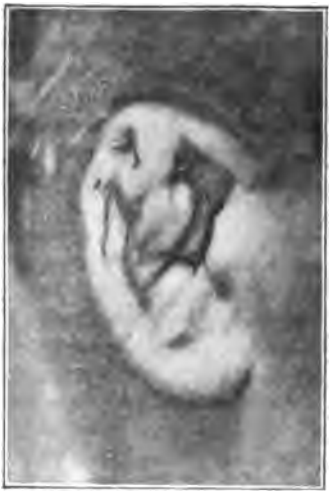


DOUBLE HÆMATOMA.

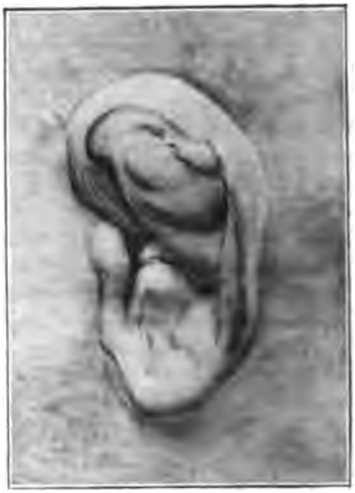
Professional Boxer, known as " Siddon's Mouse."

Notwithstanding the fact that many cases of hæmatoma auris of traumatic origin have been reported, we constantly see cases, reported even in these days, as rarities. A few years ago I exhibited five cases of deformed ears in the sane, before the New York Neurological Society. Since then I have seen several others. They were all in professional boxers. They informed me that it was very common, almost universal in "gentlemen of their profession." They also stated that, owing to certain municipal laws, "the profession" had largely migrated; otherwise they could easily have shown me a hundred cases; one of these had deformity of both ears. The boxers also informed me that similarly deformed ears were not infrequently met with among acrobats; the ones who were accustomed to be the under-men, and who received some companion who, after somersaulting, would land on their shoulders; in this way their ears had received injury, resulting in the characteristic deformity.

I have had eight photographs of these ears taken, and it is interesting to examine them with the group of eight taken from among the insane at the New York City Asylum. If the mounted photographs were to be shuffled together it would be impossible to separate them, so alike is the deformity in the two sets of cases. I have frequently seen the statement that statues of ancient boxers and athletes show this deformed ear, and that this deformity was looked upon in those days as an evidence of strength.

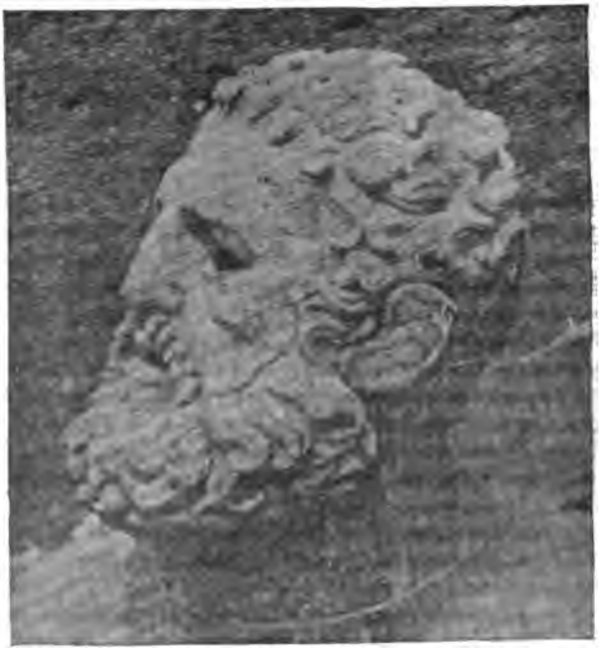


Professional Boxer, T. A.



Professional Boxer, Barres.

Roosa states that "Gudden, a German writer, quoted by Virchow, has shown that the auricles of ancient statues are very frequently ornamented by tumors resembling the vascular effusions seen among the insane. In the gallery at Munich the head of Hercules has such ears. These misshapen auricles are the typical marks of the ancient boxers or pugilists. Such fighters wrapped their hands in leather, and, thus armed, struck the ears of their antagonists; consequently in the figures of Hercules, Pollax, and other classical fighters, a deformed auricle is a regular appearance. Hector, for example, is represented as being othæmatomata." I wrote the late Prof. Joy, who was then at Munich, and an intimate friend of Gudden's son (an artist, and also residing at Munich), but he was unable to find the statues alluded to, or learn anything about them of value, though several photographs were sent me as of the probable or possible statues alluded to. I have discovered one statue that



"SITTING ATHLETE."

seems to show this deformity. It is of the Sitting Athlete, unearthed in Rome, in February, 1885, and supposed to have come from Greece. I have secured the original photograph from which the illustration in the "Century Magazine," of February, 1887, was taken, and had the photograph of the head enlarged, showing the left ear more distinctly, and the appearance certainly resembles the "insane ear." The description in the text of the article is as follows: "Every detail is absolutely realistic; the nose is swollen from the effects of the last blow received; the ears resemble a flat and shapeless piece of leather."

With the view of ascertaining the frequency with which this disease is met among the sane, I wrote several aural surgeons, asking for an expression of opinion on this point. Dr. G. O. Tansley wrote, "I have never met with one case of othæmatoma." Dr. J. B. Emerson replied to the same effect. Dr. Huntington Richards had seen several cases; two quite recently, and both of traumatic origin—one in a professional acrobat, and the other in a hotel porter, the result of the pressure of heavy trunks against the auricle. Dr. David Webster wrote: "I do not think Dr. Agnew and myself ever had a case of othæmatoma." Only a short time after this Dr. Webster sent me notes of a case that had come under his care, and was acquired while playing foot-ball. His description of the case was classical.

Examinations of the reports of ear affections treated at the Manhattan Eye and Ear Hospital, for the past eighteen years, show:

Total number of ear affections treated, - -	16,398
Total number of affections of auricle, - -	352
Number of cases of othæmatoma, - -	5
Number of cases of perichondritis, - -	4
Number of cases of tumors (nature not stated), -	20
Number of cases of malformation, - -	9

Examinations of the reports of ear affections treated at the New York Eye and Ear Infirmary for the past thirty years:

Total number of ear affections treated,	58,476
Total number of affections of auricle treated,	1,346
Total number of othæmatoma,	12
Total number of perichondritis,	1
Total number of tumors (nature not stated),	48
Total number of tumors (nature stated),	10
Total number of deformity,	10

In six of the cases of othæmatoma (just half) the cause was stated to be traumatic; in the others the causation was not given.

My conclusions from these cited authorities, my own experience, investigation of cases and articles not quoted, are that we have two conditions, namely, hæmatoma auris and perichondritis auriculæ, that result in permanent deformity of the external ear very similar in appearance. That cases of cyst and tumor have often been confused with and reported as hæmatoma auris, but should be excluded as distinct conditions and of very different origin. That perichondritis while resembling hæmatoma in the resulting deformity differs in etiology, course and pathology.

That hæmatomia auris is nearly, if not always, precipitated by external violence applied to the auricle, though this violence may be only slight.

That hæmatoma auris is not a disease peculiar to the insane, but is found quite as frequently among the sane.

That hæmatoma auris, when occurring in the sane is usually found in those classes of individuals who are especially subject to continued traumatisms of the external ear, such as boxers, acrobats, porters, foot-ball players, and the like.

That it occurred in those who received continued and often-repeated blows on the external ear, of no great violence, rather than in those who received one violent injury to the ear.

That it appears that in the cases of hæmatoma in the sane, the continued irritation or traumatism received, give rise to changes and degeneration in the structure of the external ears that predisposes to hemorrhage, and that only an insignificant blow is sufficient to precipitate the disease.

That the changes and alterations in structure produced by continued irritation or traumatisms in the insane, act as predisposing causes in a similar manner in the sane.

I was unable to find among the sane a single case where the disease seemed to have arisen from a single severe blow; I could not find a single example in a prize fighter, but I found it in professional boxers, some of whom had been in prize fights. We should consider these predisposing causes of more importance than the single blow that precipitates the disease.

That so-called trophic changes and alterations in circulation play a very unimportant part in the causation of hæmatoma auris, either predisposing or exciting in the sane or insane.

That when hæmatoma auris appears among the insane, it occurs among the chronic, demented, and restless class, who by constant working at and rubbing of their ears with their hands, or by action of their head while in bed, or by many falls and conflicts with other patients, and sometimes with attendants, bring about the same changes as occur in boxers, acrobats, foot-ball players and the like. It is but a few days since that I saw double hæmatoma in a restless dement, who had never been in an asylum, and no history of injury could be obtained.

I am informed by sportsmen and others that blood tumors resulting in thickening and deformity are not infrequently observed in the ears of hunting dogs, those that chase the game through thick under-brush, injuring the external ear in this way. It is interesting to note that one of the cases that I had photographed at the asylum was a negro, with double hæmatoma; he was in the third stage of general paresis of the insane; he had been a professional boxer; the deformity in the left ear had occurred long before he became insane; that on the right side had developed in the asylum.

When we consider that hæmatoma auris occurs in the chronic and restless class of the insane, it is not strange that its appearance has been looked upon as an indication of incurability.

The indication of incurability of the mental condition is not necessarily to be explained on the theory that trophic changes have taken place. It is quite as reasonable to accept the fact that it occurs in cases where repeated, but not severe traumatisms have been received, and that this condition happens most frequently in the chronic and incurable insane. I think that nobody would attempt to advance the theory that trophic changes would account for the frequent appearance of hæmatoma auris among boxers, or that its appearance has any effect upon their mental condition.

It seems to me that the deformed ear so frequently met with among boxers, acrobats, and foot-ball players is the result of changes following a true hæmatoma, and is identical in etiology, course and pathology in the two classes of cases.

PARALYSIS AGITANS WITH TABES.

In "Mercredi médical," December 30, 1891, is an account of Placzek's patient afflicted with an unusual pathological combination, paralysis agitans and locomotor ataxia, a condition hitherto unnoted. The man, fifty-one years old, gave no adverse family history; reported syphilitic infection at twenty years of age, and stated that his present trouble began when about forty. At the onset there were lancinating pains in the extremities, loosening of the teeth that admitted of ready extraction with the fingers, and sexual impotence. Three years later tremor appeared in the legs, vibrations at the rate of three or four every second. Facial expression and bodily poise underwent marked change. The head was bent forward on the chest. Romberg's symptoms, Westphal's sign, immobility of the pupils, sharp pains, impotence, and vesical troubles, were all present, together with diminished cutaneous sensibility and normal muscular power, the classic attitude of paralysis agitans, and failure of memory. L. F. B.

Critical Digest.

ANATOMICAL, PHYSIOLOGICAL AND PATHOLOGICAL NOTES.

By HENRY H. DONALDSON, Ph.D.,
University of Chicago.

EXPERIMENTAL AND PATHOLOGICAL ANATOMICAL INVESTIGATIONS ON THE VISUAL CENTRES AND TRACTS, TOGETHER WITH CLINICAL CONTRIBUTIONS TO CORTICAL HEMIANOPSIA AND ALEXIA.

Dr. C. v. Monakow (Archiv f. Psychiatrie, etc., Bd. xxiii., two plates). The author's contributions to the finer anatomy of those parts of the brain mediating vision are known and his conclusions, in large part, accepted.

In this paper he presents further evidence that the relations of the primary visual centres to the optic tract and occipital cortex, are in man fundamentally the same as in the rabbit, cat and dog. In these animals he has shown that injury to the occipital cortex or to the optic tract causes secondary degenerations in the anterior corpora quadrigemina, the pulvinar and the corpus geniculatum externum. These, then, are the primary visual centres. As the title indicates, the cases which are described bear also on the explanations to be given of hemianopsia and alexia. By way of introduction, he points out that there is no essential difference in the secondary degenerations which may be experimentally produced in new-born or in adult animals of the same species. The degeneration is greater, however, in the new-born. At the same time between the several classes of animals examined there are significant differences.

Upon removing, for example, the occipital cortex from a dog or cat, the secondary degeneration passes the primary centres and involves the optic tract. In the rabbit the tract is not thus involved. In other words, the primary centres are less dependent on the cortex in the lower class. As might be expected, the relations in man most nearly resemble those in the dog and cat.

v. Monakow has three new cases bearing on his main point. The clinical history, autopsy record, and microscopical examination are given for each case with ample detail. The following is a condensed statement of the facts and conclusions:

CASE I.—Male, 67 years. Previous attacks of ophthalmic migraine. 1879—apoplectic seizure, with subsequent left-sided, bilateral hemianopsia. Ophthalmoscopic examination negative. Death, 1886. Autopsy: Focus of softening in the region of the right fissura calcarina (cuneus); old and well-marked secondary degeneration of the right optic radiation, the right pulvinar, corpus geniculatum externum, anterior corpus quadrigeminum, and the right tractus opticus. Secondary degeneration of the right fornix and the right corpus mammillare.

We have here a complete and almost isolated degenerative destruction of the entire central visual apparatus. Even the right optic tract was fully (!) degenerated. The cells also in the primary centres were in large part degenerated.

The primary lesion extended so deeply into the white substance as to involve the peduncle of the cuneus. As a result, the associated cortex region was somewhat degenerated, but in a peculiar way. The fully sclerosed portions (cuneus, lobulus lingualis, and first occipital gyrus) were clearly indicated, while the process could be traced with decreasing intensity into the second and third occipital gyri and the first and second parietal.

In the very complete degeneration of the primary centres the author sees an indication that the entire cortex on which they depend has been thrown out of function. If such is the case the affected portions of the cortex must constitute the cortical visual area; and this, according to his description just given, is more extensive than that usually described. Considering the very complete degeneration of the right optic tracts, it is interesting to note with regard to the hemianopsia that the line of division did not pass through the fixation point, but ten degrees outside of it.

CASE II.—Female, 16 years. In the fourth month of life, convulsions. At a year and a half, acute brain disease, with subsequent deaf-mutism. Slight idiocy. Capable of speaking, reading and writing. Death from pneumonia. Autopsy—brain: Old and extensive hydrocephalic enlargement of the left posterior and inferior cornua on the left side; atrophy of the occipito-temporal lobe. Secondary degeneration of the optic radiation, the left posterior corpus quadrigeminum, and both corpus geniculatum internum and externum and optic tract.

In this case attention is specially directed to the fact that a localized hydrocephalic disturbance, associated with a diffuse ependymitis, was able to cause through disturbance of the cortex, a secondary degeneration in some of the primary visual centres. The special point of interest, however, lies in the fact that v. Monakow has previously pointed out that within the corpus geniculatum externum certain cells lying ventrad degenerate with special ease after lesions of the cortex, while those lying dorsad do not do so, the latter being specially associated with the optic tract. In this case the ventral group was degenerated, while the dorsal group was apparently intact.

Case III.—Male, 62 years. Landscape-painter, previously healthy. 1884—attack of apoplexy, followed by transient paresis on the right side, with permanent, but incomplete right-sided hemianopsia, alexia and paragraphia. Powers of visualization weakened. Death, 1889. Autopsy: Softening in the left angular gyrus and pracuneus; the left cuneus not involved; secondary degeneration in the dorsal portion of the left optic radiation, in the left corpus geniculatum externum and optic thalamus and in the anterior corpus quadrigeminum. Slight atrophy of the left optic tract.

The region of softening was occupied by a large cyst, surrounded by smaller ones, and was located in the gyrus angularis and the superior parietal lobule. The disturbance had penetrated the white substance to a sufficient depth to involve the dorsal portion of the sagittal fibres forming the optic radiation. The cause was a thrombosis of the posterior branch of the left Sylvian artery.

Macroscopically the lesion was sharply bounded, but microscopically it was extensive.

For the most part, however, these extensions were along definite tracts, thus showing their secondary character.

The cuneus and lobulus lingualis were normal, and the fibres from them to the primary centres were not degenerated. The main portion of the visual area was, therefore, free from degeneration. The reduction of the field of vision was very marked, nevertheless. For this he holds the gyrus angularis and the second occipital gyrus, O_2, responsible.

Without invoking a visual word centre as distinct from a visual object centre, he seeks to explain the peculiar symptoms of this case by a disturbance of association. Reading involves at least a revival of visual, auditory and motor memories. In this case the direct association of the visual and auditory centres in the left hemisphere was apparently interrupted and in accordance with the idea which he develops at some length, an impulse passing between these two centres must in this instance travel by way of the right hemisphere. This longer and unusual course is in his estimation one factor in causing the dyslexia. To this may perhaps be added the disturbance in the movements of the eyes necessary for reading.

To sum up, these cases show a relation between the visual cortex and primary centres similar to that which has been experimentally determined in the cat and dog. They show that lesions in widely separated localities may cause hemianopsia, and that on the one hand, therefore, the hemianopsia in these cases had not an exact localizing value; while, on the other hand, they suggest that the visual cortex extends onto the convex surface some distance beyond the cuneus and the regions immediately surrounding it. An explanation for dyslexia is offered which renders superfluous the assumption of a visual word centre, separate from the visual centre for objects.

Case I. also shows the secondary degeneration of gray matter, a fact which should be reiterated until it is accepted. In case II. the degeneration appears to be due to a localized distension in the left occipito-temporal region. The field of vision was not examined in this case.

PSYCHOLOGICAL NOTES.

BY WILLIAM O. KROHN, PH.D.

By way of introduction we think it necessary to say that we regard psychology as a natural science. Psychology must be treated as a science of fact, and its questions as questions of fact. We find no room for long-drawn out metaphysical discussions concerning the hazy "categories of thought." Nineteenth century men demand nineteenth century methods. A fourteenth century psychology will not meet present wants. We shall approach the subject from the experimental and physiological point of view, believing that in this way more correct solutions will be attained because of the larger wealth of material that is furnished. Psychology gains its material, its facts, along three very important lines of investigation. It utilizes all the results of (1) Experimental Research. (2) Human Pathology. (3) Histology of the Nervous System and Comparative Anatomy. To these three must be added the wealth of evidence from Psychiatry, or Morbid Psychology, and Human Embryology.

LABORATORY NOTES.

Some are just beginning to realize the necessity of laboratory equipment for teaching psychology. There are in this country but six or seven well-equipped laboratories, that of Clark University being in the lead, but within the present year no less than fifteen others have been projected.

The writer returned in March of this year from a sojourn of nine months on the Continent. From two weeks to three months were spent at each of the principal university centres of Germany. The time was spent in the study of men, methods, and laboratory equipment at those universities, enjoying facilities for work in experimental psychology. The universities of Heidelberg, Strassburg, Zurich, Freiburg, Munich, Prag, Berlin, Leipzig, Halle, Göttingen and Bonn were visited in the order named. From time to time in this department we shall make reference to the laboratories in these old-established universities, selecting only those features that would be of more especial interest to the physician.

At the University of Strassburg, Goltz and his assistant, Ewald, have much to show that is full of interest. Goltz has a large collection of animals—dogs, monkeys, pigeons, salamanders, etc.—from which the cerebrum has been wholly or partly extirpated. Nowhere is vivisection carried on on a larger scale than at Strassburg. Indirectly there is much valuable material to be made use of at this university. Ewald is ingenious as a mechanical contriver. His newly-invented chronoscope has certain advantages over the Hipp machine, and is much cheaper (95 marks).

Zurich attracts the psychologist mainly through Dr. Forel. His work is chiefly in the line of psychiatry. In his "Anstalt," one sees much interesting pathological brain matter; indeed, the best at any of the German universities. Work in neurology and histology is carried on continually in a well-appointed laboratory, which is under the immediate supervision of Dr. Forel. The writer is greatly indebted to this delightful man for showing him many hypnotic experiments. Hypnotism is constantly employed by Dr. Forel in this Anstalt as a means of cure. Much is to be seen here of hypnotism in its practical application as a therapeutic, and which is replete with interest. The clinics in psychiatry supply much interesting material for study and examination.

At Munich Prof. C. Stumpf has a very useful though unpretentious collection of apparatus for sound experiments, accumulated by him in order to carry on that large amount of experimental work in this field in which he is recognized as an authority, and in which he has labored so assiduously. His methods are of the most painstaking sort, and "exactness" is a fitting label for all his experimental work. He works the same problem over and over again regardless of time involved, subjects all his results to a revision, in which the most exacting tests are used, confirming and reconfirming his previous conclusions, and all the time aware that the world is waiting his long-promised third volume on "Ton-psychologie." He has an especially constructed "Ton-messer" (Appum) and the best series of forks found anywhere, which were taken from a piano constructed entirely of tuning-forks. He uses much other apparatus along the lines of psychology to illustrate his lectures in the classroom. The writer is indebted to Dr. Freiherr von Scheenck-Notzing, who showed him much in the way of hypnotic experiments. This well-known physician makes constant use of hypnotism as a therapeutic agent. He is especially successful in the use of hypnotism in producing anæsthesia. In surgical operations; *e. g.*, amputations and difficult child-birth, he relies upon this alone. It is no small privilege to see this skillful practitioner, who, next to Wetterstrand, of Stockholm, uses hypnotism more than any other physician in his general practice. He is a very vigorous man and a close student of psychology.

The University of Illinois will have an exhibit at the World's Fair. One of its interesting features will be the exhibit of the Department of Experimental and Physiological Psychology of this institution. This will be made up of four divisions (1) apparatus, (2) charts, (3) models, (4) photographs.

Among the pieces of apparatus the following are the chief: Apparatus used for measuring reaction time; *e.g.*, the time required for any sensation, as a sensation of color, to reach the brain; the time required for the central thought processes, and the time required for a choice or volition to be carried to the appropriate muscles; apparatus which will show the interaction of the mind upon the body and of the body upon the mind; apparatus for showing that the sensations of temperature are due to the distribution of heat and cold spots, and which will serve to locate these spots and enable us to make a map showing their unequal distribution in different individuals, and in different areas of the same individual; apparatus for showing the "pressure spots" in different individuals; apparatus for experimenting upon the sensations of motion on the skin; apparatus used in making tests upon the sensations of touch, of movement, of rotation, the innervation sense, sensations of taste and smell as well as hearing; special apparatus for experiments upon the sensation of vision; apparatus for measuring the influence of alcohol, drugs, stimulants, etc., upon the mental life and thought activities.

The charts will be designed to show the latest results of the study of brain localization; for example, the sensation centres of vision; hearing, taste and smell will be indicated, as well as the centres on the brain that have to do with the movements of the muscles of the head and eyes; the centres that are concerned in the motions of the arms, legs, fingers, toes, and the speech centre. Also charts that show the configurations of the surface of the brain, its fissures and convolutions.

Models of the normal brain, not only of the adult, but of children at different ages, showing the various stages of brain development; models of the brains of a few of the animals, for the purpose of making a sort of comparative study of the brain; models of abnormal brains, showing the difference between the brains of the deaf, the blind, the criminal, as compared with each other and with the normal; models showing the effect of different habits, different occupations and professions, different forms of mental activity—upon the brain, for example—the brain of a mathematician as compared with that of a journalist.

Among the photographs will be those of distinguished psychologists, of important pieces of apparatus that cannot be transported and exhibited, of peculiar and abnormal brains, of persons in the hypnotic sleep, etc.

The plan of the exhibit is to have a small psychological laboratory in working order. At stated times it will be in actual operation, experiments being performed the same as in real university work, and the results recorded. It is hoped that in this way a large number of experiments may be made upon a great number of individuals, and that these results may be used in making a statistical table that shall guide in future investigations. Opportunities would be given for every interested individual to take any or all of the experiments and leave his record. This will put all the best apparatus into actual use and show it in the way most calculated to interest people.

THE INTERNATIONAL CONGRESS OF EXPERIMENTAL PSYCHOLOGY.

The first Congress on this subject met in Paris in 1889, about one hundred and fifty being present; its object being to gather together from all parts of the world students of this new branch of learning. To maintain the connection between the physiological and the psychical sides of each question was an important point in the discussions, and will lead to the harmonizing of these hitherto diametrically opposed points of view.

The second Congress was held in August, of this year, in London, and received much more notice than the previous one. It members numbered nearly three hundred with seventy or eighty visitors from all parts of Europe, the United States and Canada.

The meeting lasted four days (Aug. 1–4), Prof. Henry Sidgwick presiding. Among other things, in his opening address, he spoke of the wide range of subjects to be considered. To him Experimental Psychology seemed more appropriate as a name for the Congress than that of "Physiological Psychology," adopted at the Paris meeting. He acknowledged the leadership of Germany in laboratory work, and of France in hypnotism, and expressed his regret that England had done so little. In closing he announced the division of the Congress into sections, an arrangement common to such scientific meetings.

Lack of space prevents any but a brief notice of the papers, omitting altogether such as would not be of especial interest to medical men.

The first paper was read by Prof. A. Bain, on the advantages in psychology of introspection on the one side, and experiment on the other, with the ways in which one could help the other. After a discussion of the prospects of psychology, by Prof. Charles Richet, a very vivid sketch of color and sound association was given by Prof. Gruber. A remarkable case of complete loss of memory for present events, and complete incapacity for decision, was related in detail by Prof. Pierre Janet. He said this condition resulted from a jest—deceiving a woman by the false statement of her husband's death; the curious point being that the loss of memory extended backward to six weeks before the accident.

In one of the section meetings, a paper was read outlining a very careful study and examination of the precise tract of the visual path through the brain in man, from the eye to visual centre in the cortex of the calcarine fissure. This was satisfactorily proven in the case of man, although the results are not in accordance with the results of experiments upon lower animals. Prof. Schäfer brought forward the results of experiments to prove that there was no reason to attribute any intellectual powers to the prefrontal lobes of the brain. Dr. Frederic Van Eeden read a report of his use of hypnotism as a therapeutic agent based upon five years of experience along with Van Renterghem (Amsterdam). This paper renewed the old-time discussion between the school of Nancy and that of Charcot at Salpêtrière, as to whether the hypnotic sleep is a normal or a pathological condition. In criticism, we would say, in passing, that too much time and too prominent a place in the Congress was given to the discussion of hypnotism, telepathy, and allied subjects. Some time was given to the report of a census of hallucinations, carried on in England, France, and America. The answers to the questions asked were readily obtained, except in France, where the dislike of the people to answer any psychological questions about themselves prevented a satisfactory report. Prof. William James, of Harvard, conducted the investigations in this country, under the auspices of the American Society for Psychical Research.

One of the most interesting papers was that of Dr. Donaldson, of Chicago University, giving an account of the minute investigation of the brain of Laura Bridgman, the blind deaf mute, who died in Boston, in 1889. There was depression of the motor speech centre, with slender sensory nerves, and somewhat thin cortex over the areas of the defective senses. This paper, without doubt, showed more careful and painstaking research than the average, embodying, as it does, the results of the author's two years of close investigation and constant study of this extremely interesting brain. It is one of the most important pathological and anatomical contributions of modern times, and does America great credit.

After some final business the Congress adjourned, having decided on Munich as the place of the next meeting, to be held in 1896. A committee was also appointed to consider the suggestion of an extraordinary meeting in America next year, in connection with the World's Fair Exposition.

PSYCHOLOGICAL LITERATURE.

PSYCHOLOGY OF THE SKIN.

"Ueber den Hautsinn" (Archiv f. Anatomie und Physiologie. Separat Abzug, 1892. Von Dr. Max Dessoir). The writer of this interesting little book is (since February, 1892) a *privat docent* in the University of Berlin. Though a very young man he has already distinguished himself as a careful thinker, a vigorous, enthusiastic worker and a painstaking experimentalist. He has more recently been associated with Prof. Hermann Munk, in the latter's experiments upon the special functions of the cortical centres. The work before us gives a general *résumé* of the important work done in this most difficult field of psychological experiment. Dr. D. correctly recognizes the fact that the study of the skin-sensations will throw much light upon the problems of psychology. His discussion of the term "sensation" is decidedly neat and clear cut; and this is followed by an elucidation of the experiences known as "mitempfindungen"—such as when a decayed tooth, aching severely, causes pain to be felt in all the teeth; or when neuralgia of the trigeminus nerve calls forth pain in the limbs—so with the skin, we also have oftentimes such double perceptions; *e.g.*, when a single touch is felt and localized as two. With reference to dermal after-images, the author introduces a new classification, that of homonomous and heteronomous after-images. These are in turn subdivided in the usual way into positive and negative after-images. His interpretation of the law of specific energy is remarkable for its clearness, and the real help it affords to the beginning student in psychology. With the same keen analysis he considers, in a subsequent chapter, the projecting or externalizing of sensations; a discussion of how man comes to localize cutaneous sensations. His conclusions are supported by almost numberless experiments. He classifies sensations as follows: (1) Total sensations (feeling well or ill). (2) Organic sensations (hunger, nausea, etc.). (3) Irradiation-sensations (tickling, shivering, etc.). (4) Summation-sensations (pressure, temperature, pain). (5) Central sensations (smelling, taste, hearing and vision). This classification seems to omit the sensations of contact and simple touch, as well as muscular sensation, and that of motion on the skin, to which, however, he makes illusion in a subsequent place.

The chief interest of the book clusters around the author's discussion of temperature-sensations. He first raises the question as to whether there are two independent senses of cold and of heat; and in this connection compares the temperature-sensations to sensations of light and shade. Cold is the absence of heat, as darkness is the absence of light, which reminds us of Pflüger, who calls cold "the black of the dermal sense." The difference in the temperature-sensations (cold, heat) is not due to specific differences in the afferent nerves themselves (as Hering maintains), and there is no definite temperature centres on the cerebral cortex—so the difference can only be in the end organs. He refers to the experiments of Blix, Goldscheider, and Donaldson, and thinks the apparent results do not amount to a demonstration, and have been worked for more than they were worth. By means of electricity no sensations can be aroused in these so-called heat and cold spots. He is tempted to regard many of the seeming temperature impressions resulting from mechanical stimulus as illusions of sense, just as when one moves a pencil point over the skin, he can discover besides heat and cold spots, "points of cutting, pain, quivering, thrilling, whirling, tickling, scratching and acceleration." The *nerve* is excitable by means of pressure or electricity, but not excitable by means of temperature stimulus. The "*spots*" are excitable through temperature stimuli, but *not* by means of pressure or electricity. He makes a great many interesting experiments upon normal dogs, in which he extirpates certain regions with a view to discovering temperature centres. He finds that each centre is a temperature centre. The evidence from pathology is confusing and on the whole unsatisfactory. We would like to give the results of his exceedingly interesting investigations in detail, but lack of space precludes. Suffice it to say that Dessoir's treatment is a thoroughgoing success, and is a little gem of its kind. Its real worth commends it to every psychological student. Even his opponents cannot help but concede this.

ACROMEGALY.

By JOSEPH COLLINS, M.D.,

New York.

The disease now known to the profession as acromegaly is of comparatively recent date, it being scarcely six years since it was first accurately described as it showed itself in two of Charcot's patients, both females, at the Salpêtrière. It is unnecessary to say that homage is due to P. Marie for first describing the disease with precision; indeed, Verstraten has given to it the name of Marie's disease, and many writers following him have referred to it in the same way. However much we may deprecate the application of personal names to particular diseases, it would probably be advisable to continue designating the symptom complex known as acromegaly, as Marie's disease, until we have learned something about its causation and pathology, and then give to it a name based on such acquired knowledge, particularly the latter. The term acromegaly is especially unappropriate, its literal meaning being simply large extremities. In the disease to which the name is applied, however, the changes in the face are as of much importance and as frequent occurrence as in the extremities. Therefore the clinical picture called up by the term acromegaly does not literally suggest the disease described by Marie. Mosler, in an extensive critical study of the disease, and particularly of the arguments put forth by Souza-Leite in his well-known monograph, argues that we should refer to the disease as pachyacria, a word which would in a way signify that the change was a thickening of all the structures of a part involved, and this not alone of the extremities. Recklinghausen was the first to put forward this term pachyacria, and Mosler concurs in its propriety.

Like a great many other diseases that are seemingly of recent date, acromegaly has probably been noticed and described under other names for many decades past. A disease which was probably acromegaly was reported as seen in two cases by Friedreich, under the title of "hyperostosis of the entire skeleton;" another by Fritsche and Klebs, under the title of "gigantism;" another by Lambroso as "general hypertrophy, macrosomia." Then no doubt some of the cases that have come to light under the heading of myxœdema have been of this nature, particularly a case by Henrot reported under this title. Souza-Leite thinks that there can be no question but that a case by Saucerotte-Noel in 1772 was really a typical case of this disease. A critical search of the literature of the past century would be likely to yield other cases which were quite as characteristic as those reported by Marie. This does not in the least detract from the honor due Marie for calling the attention of the profession to this pathological entity in such a lucid and explicit way, that although a great number of cases have since been reported, no additional important symptoms have been produced.

In Souza-Leit's brochure, which is a most complete exposition of the subject up to the date of its appearance, a complete record of all the published cases are to be found. More recently a translation of Souza-Leite's article under the auspices of the New Sydenham Society has appended to it the notes of nine cases, the reports of which had appeared in the journals between the time of the appearance of the brochure and its translation. This brought the sum total of cases up to forty-eight, which probably includes every case on record till near January, 1891. The principal object of this present digest is to bring the bibliography of acromegaly up to date, and to note and discuss any advances that have been made in respect to the disease, either in its etiology or pathology. It is a deserved compliment to Marie to say, that so thorough and critical was his description of the disease as originally observed by him, that really nothing of importance has been added to the symptomatolgy of the disease since that time. Although the clinical picture presented by acromegaly is very well known, it will probably be of no disadvantage if we take a glance at the history and development of the disease before we present the notes of the cases that have been recently published.

As regards the etiology of the disease it may be said that it occurs somewhat more often in males than in females. Although we cannot speak definitely concerning its appearance in the different races, racial differences probably offers no exemption. A case has recently been described in a negro (Berkley). Although it may appear at any age, the larger proportion of cases by far first show themselves between puberty and early adolescence (19 to 26, Souza-Leite). It may show itself at a very early age (Rolletson's case), or it may first present itself long after middle age (Erb's, Waldo's, and Hare's cases). Congenital and hereditary influences are excluded from etiological significance in this disease by Marie. He is particularly decided on the point that those cases that have been described under the heading of congenital acromegaly do not belong to the category of true acromegaly as he has described it. Recently, however, some cases have been reported that would tend to show that hereditary influences may have some place in its causation.

Among the exciting causes mentioned are fright (Pel), mental depression (Pechardre), syphilis (Marie, Brigidi, *et al*), exposure to cold (Marie, Verstraeten), traumatisms, either falls or direct injury (Minkowski), rheumatism or gout (Hadden, Ballance, Marie, Souza-Leite, Goodlee, *ct al*), alcoholism (Brigidi, Osborne), the exanthematous fevers, such as variola, scarlatina, malaria, and bronchitis, epistaxis, multiple abscess, severe and prolonged cardiac palpitation, abortion, have all been mentioned by one or more writers as having preceded the appearance of the symptoms of acromegaly, but their connection would not seem to be a very intimate one. In most of the cases published within the last two years there has been absolutely no apparent connection between an etiological influence and the appearance of the disease. In some few cases (Hare, Rolletson, Litthauer), the extremities had been large so long as the patient could remember.

The theories that have been forwarded concerning the actual causation of the disease may be stated as follows:

1. Marie's. That the disease is a systematic dystrophy dependent in some obscure way upon the disease of an organ, the pituitary body, the functions of which are as yet unknown. It is only just to say that although a comparatively large number of autopsies have shown that there was a lesion in the hypophysis cerebri in many of the cases, Marie does not support this theory with any more vigor than formerly; that is, he is still inclined to believe that the pathogeny of the disease is yet to be demonstrated. A considerable number of cases yet under observation, of which may be mentioned Osborne's, Bignami's, Bard's, Hare's, present symptoms that are apparently dependent on and traceable to a lesion in the pituitary body.

2. Klebs'. This pathologist, astonished by the existence of the thymus in his case, and taking into consideration a symptom known as post-sternal dullness which had some importance attributed to it by Erb, formulated the theory that the thymus persisting was the seat of vascular budding and proliferation, angioblasts were produced and these formed the foci of the change that went on in the affected parts of the body.

There are serious objections to this theory, the prominent one being that in many cases it is found on postmortem that the thymus has not persisted; indeed Klebs had a case sometime after formulating the above hypothesis in which there was no post-sternal dullness. Then again there are other conditions attended with persistence, or even hypertrophy of the thymus, and which are not associated with the development of acromegaly. It must also be remembered that it was not possible to prove that the thymus was the middle point of the vascular budding.

3. Virchow's. This pathologist thinks that in acromegaly we have only half a disease described, *i. e.*, the latter half, with its degenerative details, while at an earlier period it is often accompanied by an increase of muscular power, and is in some instances apparently hereditary. Freund's case lends considerable support to this view.

4. The nervous theory. In spite of the fact that it is based on no positive knowledge, the theory that acromegaly is a nervous disease has taken a very firm hold on the minds of those who have seen most of the disease.

A favorite supposition of physiologists is that there is no organ in the body in post-uterine life but what has some physiological function to perform. This was the principal reason why Klebs' theory was not greeted with any enthusiasm; the thymus is a body which plays no part in post-uterine life. On the other hand, the pituitary body is always present, and the supposition is that it is a glandular body, particularly the pre-hypophysis. The histological structure of this part of the pituitary gland, being made up of convoluted tubules lined with epithelium and highly vascular as it is and its origin, favors this view. Ragowitsch reasoning from the results obtained by Marmesco by removing the hypophysis in some rabbits, is inclined to favor the view that these glands secrete a substance the retention of which in the system, and particularly its action on the nervous system, facilitates the development of acromegaly. If this theory gain acceptance, as pure theory, it would be easy to follow out a process of reasoning such as is suggested by Marie and Marmesco in the "Archives de méd. et d'anatom. path." for July, 1891, and say that the accumulation of this poison in the extremities and face from some special predilection brings about a condition which is the equivalent of the hyperæmia of inflammation and which is followed by the hypertrophic changes so apparent in the disease. If this theory could be in any way proven, the disease would then take its place as one of the auto-toxæmic diseases.

The symptoms of the disease present themselves very gradually and are preceded or not by perversions of the sexual functions (amenorrhœa in women, sexual weakness in man). The first thing noticed is a gradual enlargement of the fingers and hands, and simultaneously, or a little later, the feet are involved. The enlargement affects the soft parts as well as the hard, and goes on to an enormous extent. The fingers become sausage shape; the hands, principally because of the great increase at the wrists, battledore shape. The arms are rarely affected. Except in some cases a widening of the epiphysis at the elbows and atrophy of the muscles. The fingers appear short; the nails, though greatly increased in size, do not generally present any trophic trouble, and there is no deformity of the extremities. In the feet the large toe may become increased out of all proportion to the rest of the foot. The changes in the head are principally confined to the upper and lower jaw, particularly the latter, which gives the prognathous face. The thing that may first attract the patient's notice, however, is that each time that he purchases a new hat it must be a size larger (Osborne). The nose, lips, especially the lower, and the tongue are enormously enlarged. The alveolar processes are frequently widened and the teeth separated. The eyelids become elongated, the lashes coarse and unwieldly, and the color of the lids a mild brown. The shoulder girdle is enlarged principally from the participation of the clavicle in the hypertrophy. Occasionally there is an area of post-sternal dullness at the upper part (Erb). The trunk presents two curvatures, a more or less marked kyphosis in the cervico-dorsal region, and an anterior deformity due to involvement of the lower portion of the thoracic cage. The deformity has been aptly compared by Marie to the figure of Punch. There is frequently a slight degree of scoliosis, and always, if the course of the disease is sufficiently long, a compensating lordosis in the inferior dorsal and upper lumbar region. The pelvis is frequently involved, but only to a moderate extent. Ordinarily there is no disturbance of sensation. The hearing is frequently affected and the ears are greatly enlarged. There is often a considerable degree of exopthalmos, and occasionally unilateral hemianopsia and homonymous hemianopsia. The optic disc is occasionally very pale and the veins of the retina turgid. The larynx is frequently augmented in volume not alone in man, but in woman, and the voice becomes more grave, stronger, of longer duration, and especially disagreeable. The speech is slow, embarrassed, guttural, and seems to stick in the mouth. The face takes on the appearance of an elongated oval, and the sexual organs are frequently atrophied. The disease may be preceded in its appearance by any variety of hybrid symptoms, having more or less intimate relation to the disease. They are headache, malaise, mental apathy, varying pains, feelings of premonition, change in temperament, bodily weakness and loss of ambition, markedly increased appetite, great somnolence (Packard), perversion of *morale*, a dry skin, which has a tendency to crack, and polyuria. Many of these symptoms may attend during the course of the disease.

The symptoms have been elaborately classified by Souza-Leite as follows:

1. Objective.
2. Subjective.
3. General.

Each of these two first groups may be subdivided into:

(*a*) Constant, fundamental, or principal symptoms.

(*b*) Inconstant, accessory, or secondary.'

This classification will be found very useful even though it be somewhat artificial; but it is not possible to here enter into a consideration of it.

The following cases have appeared since the English translation of Souza-Leite's brochure, and will, with the list appended to the end of this paper, I hope, bring the bibliography of the disease up to date. It will be remembered that the number of cases in that translation was brought up to forty-eight. The following cases will be numbered from that number onwards, without respect to priority of publication.

OBSERVATION XLIX.—(Stembo.) Woman, aged forty, who first presented symptoms of the disease concomitantly with the appearance of the climatric at the age of thirty. She first noticed enlargement of the feet and hands so that her shoes and gloves would not fit. The enlargement was after noticed in the nose, the lower jaw, lower lip, and the tongue enormously; likewise the palate and a part of the larynx. The ears remained normal; voice deep and masculine; urine increased in quantity, no sugar or albumen, no disturbance of sensation. Right patellar reflex absent; left, weak; internal organs, normal. No apparent causation for the development of the disease.

OBSERVATION L.—(Litthauer.) Male; good family and personal history; married; three children, two died in infancy. Disease first showed itself thirteen years before.

The hands and feet began to enlarge, and went on increasing for two years and then stopped. In the beginning the hands did not give him any particular trouble, but now they often become "sleepy," and he cannot do his work. Formerly his sexual appetite was enormous and was gratified; now the sexual functions are normal. He denies syphilitic infection. Mucous membranes pale; no œdema; no eruption on the skin; no sensory disturbances. Some kyphoses; ideation slow; speech altered; mental hebetude. Pupils normal. Perverted proportion between the size of face and head. Face has assumed an oval shape mainly from increase in size of the lower jaw. Nose, greatly enlarged; the lower lip likewise and somewhat cyanosed. Neck short and thick, circumference 41 c.m. No post-sternal dullness. Heart and lungs normal. Urine and genital apparatus normal. Red and white blood corpuscles normal in proportion. Hæmaglobin remarkably decreased, 40 per cent. Hands cold to the touch, battledore shape; fingers, sausage shape. Marked anæmia. Myopia of both eyes; field of vision limited; retina normal. No disturbance in sensation or electrical reactions.

OBSERVATION LI.—(Pel.) A girl, previously healthy, of good family history, and with no acquired neuropathic predisposition, received just at the time of menstruation a severe psychical trauma. From this time she dates all the symptoms of the present trouble. First she had general nervous symptoms, such as head and body ache, paræthesia, psychical depression, apathy, etc. Soon after this the hands, feet, and face began to enlarge. In due time a complete picture of acromegaly was developed. She has had amenorrhœa since the time of the fright, although the genital apparatus seems normal. No post-sternal dullness or other evidence of persistent thymus. Thyroid apparently smaller. Author gives it as his opinion that the trouble is neurotic.

OBSERVATION LII. (Bignani.) Female, forty-nine years old. Symptoms began when twenty-five years old, and came on after an abortion which was accompanied by a great loss of blood. Since that time she has not menstruated. There are no hereditary or etiological factors with the exception of the abortion. At the beginning of the disease there were vague pains, paræsthesia, pains in the bones and joints, headache, and then the remarkable increase in size, which was participated in by the lower jaw, the skull, scapulæ, clavicles, larynx, and extremities.

Muscular power began gradually to decrease; moderate degree of exopthalmos on both sides; opthalmoscope showed simple atrophy of the papillæ, right external strabismus, nystagmus, limitation of the movability of the eyeballs in all directions; appetite enormously increased; general muscular weakness without apparent muscular atrophy; skin thickened in places, and, with the exception of slight sensorial disturbances in the hands, sensibility was intact; weakness of the patellar reflexes; cardia hypertrophy; sensation of taste rather slow in its response. The disease made far greater progress in the first part of its course than the last.

OBSERVATION LIII. (Graham.) Male, aged thirty-nine; presented the following marked features: Enlargement of the face; thickness of the lips, especially the lower one; face elliptical in shape; hypertrophy of superior and inferior maxillæ; atrophy of the optic nerves; enlargement and flatness of the hands, feet likewise enlarged; arms and legs normal in size. The disease had lasted for upward of five years.

OBSERVATION LIV.—(Graham.) Male, died aged fifty-one. The disease commenced when he was about twenty-five years of age. He presented the following conditions: Enlargement of the head and face; prominent eyebrows; nose enlarged; hypertrophied superior and inferior maxillæ; lips thickened, especially the lower one; face elliptical in shape and enlarged in every way, resting upon the upper and anterior portion of the chest; neck short and thick; marked kyphosis of the spine in the upper dorsal and lower cervical vertebræ sternum very prominent; enlargement of the scapulæ, scoliosis, lumbar lordosis. Hands were enormously enlarged, as were also the feet. No marked change in the arms or legs with the exception of the knees which were increased in size. No post-mortem examination was made.

In both these cases the soft parts and bones were enlarged; the vitality diminished; the mental faculties impaired; the voice was altered in both, and there was sexual weakness, but children were begat in both cases after the disease had shown itself.

(*To be continued in the January number.*)

Periscope.

EXCERPTS WILL BE FURNISHED AS FOLLOWS:

From the Hollandish, Swedish, Danish, Norwegian, German, Portuguese, Roumanian, Spanish and Italian:
F. H. PRITCHARD, M.D., Norwalk, O.

From the Swedish, Danish, Norwegian and Finnish:
FREDERICK PETERSON, M.D., New York.

From the German:
WILLIAM M. LESZYNSKY, M.D., New York.
BELLE MACDONALD, M.D., N. Y.

From the French:
L. FISKE BRYSON, M.D., N. Y.
G. M. HAMMOND, M.D., N. Y.

From the French, German and Italian:
JOHN W. BRANNAN, M.D., N. Y.

From the Italian and Spanish:
WILLIAM C. KRAUSS, M.D., Buffalo, N. Y.

From the Italian and French:
E. P. HURD, M.D., Newburyport, Mass.

From the German, Italian, French and Russian:
ALBERT PICK, M.D., Boston, Mass.

From the English and American:
A. FREEMAN, M.D., New York.

From the French and German:
W. F. ROBINSON, M.D., Albany.

The Editor will not accept as ORIGINAL ARTICLES and CLINICAL CASES those that have appeared elsewhere.

Authors are requested to make none but typographical corrections on the proof sent to them. The manuscript must represent the final form in which the article is to be printed.

PATHOLOGICAL.

THE EYE SYMPTOMS IN FUNCTIONAL NEUROSES.

The authors, Herman Wilbrand and Alfred Sänger (Neurolog. Centralbl., No. 17, 1892), define the term functional disturbances of the eyes, as a diminution of the central and peripheral vision, with normal ophthalmoscopic findings, and in general normal pupils, associated with involvement of the external ocular muscles and the accommodation, and with symptoms of irritability in the course of the trigeminus and facial nerves. Functional disturbances of other nerves are almost always present at the same time. Functional affections of the visual apparatus may also arise in the course of organic diseases of the nervous system.

The contraction of the visual field resulting from fatigue, which rapidly disappears under normal conditions, is more persistent in abnormal states, and may sometimes lead to the complete but momentary suppression of the entire field. The failure to recognize these phenomena may lead to entirely erroneous conclusions. Equally concentrically narrowed fields are either found temporarily in connection with a hysterical, hystero-epileptic or epileptic attack, or permanently in epileptics independent of the attack. W. M. L.

A THEORY OF SUBCORTICAL APHASIA.

Bleuler coincides with Freud in the view that subcortical word-deafness probably arises through incomplete bilateral lesion of the acoustic field, possibly under the influence of peripheral disturbances of hearing. It is, however, quite likely that the acoustic word-pictures are conducted to the brain cortex (*i. e.*, consciousness) through the same fibres which transmit impressions made by the other qualities of sound. Otologists have recorded several cases in which the hearing for various noises, for musical sounds and for conversation, was affected in different degrees through peripheral disturbances. Incomplete word-deafness, or a difficulty in hearing words, may be induced by solely physical means. He concludes that: (1) It is not necessary to ascribe the word-deafness to a central lesion; (2) that a general derangement of hearing can suppress the acoustic comprehension of words, without any considerable alteration in the perception of other qualities of sound (Neurolog. Centralb., No. 18, 1892). W. M. L.

THE CHANGES BROUGHT ABOUT IN THE NERVOUS SYSTEM BY SYPHILIS AND THE PATHOGENESIS OF TABES.

Marmesco (Wiener med. Wochen., No. 51 and 52, 1891). The author critically examined four cases of syphilis of the nervous system which had been under the observation of Prof. Möli, of Dalldorf, and formulates his conclusions as follows:

1. The changes in the blood-vessels which one finds in syphilitics have, in part, an inflammatory character, and belong to that variety of blood-vessel degeneration

which has been described by Heubner, and in part they show a degenerative character which takes the form of a hyaline thickening of the blood-vessel tissue and a partial obliteration of the lumen of the blood-vessel.

2. The changes in the nerve tissue occur sometimes through change in the blood-vessels which results through disturbance of the circulation, and sometimes it is brought about by the direct action of the syphilitic poison on the nerve tissue itself; in the first instance the pathological change is secondary, in the latter it is primary.

3. The primary manifestations of the disturbance is seldom found in Goll's columns alone. Almost always it involves the entire posterior columns, and then it passes along in the way described by Charcot-Flechsig, which depends on the course and method of development of the posterior columns and their inter-relationship.

4. This form of syphilitic tabes is clearly degenerative and has no peculiarities. Other poisons alone or with the syphilitic infection can bring it about. It can be taken for a toxic variety of tabes, of which the most important cause is syphilis.

5. It is probable that the degeneration of the nerve fibres depend on a primary disturbance of the nerve centres. It is not alone in tabes that such is the case; one can compare it with the action of a poison, the method of its action which is already known, and find that it first involves the ganglion, and later the nerve fibres become involved as a sort of a secondary degeneration, and so it must be considered.

6. Outside of the degeneration there occurs anatomically a hyperplastic form of syphilitic tabes (pseudo-tabes, syphilitic myelitis of the posterior columns), whose course may end in recovery, as has been definitely pointed out by recent French works (Neurolog. Centralb., July 15, 1892). J. C.

ALCOHOLISM.

T. S. Latimer, M.D. (Medical News, July 2, 1892) draws the following conclusions from a study of 2,012 cases of alcoholism. The clinical phenomena attending excesses in the use of alcohol are the direct result of over-stimulation and are not due to the abrupt withdrawal of the stimulus. Though ability to swallow and retain stimulants is frequently wanting, the desire for them almost uniformly persists. Alcohol is unnecessary in the treatment of such cases and is usually hurtful. The absolute and immediate withdrawal of alcohol is of the first importance, even in cases characterized by great feebleness and inability to take food. Forced feeding is rarely necessary and of doubtful utility in most cases. For the protection of the patient no bonds are called for, and when necessary for the protection of others, they injuriously affect the mental state of the patient. A. F.

PARADOXICAL PATELLA TENDON REFLEX.

In the "Centralbatt f. klinische Medicin," No. 31, 1892, Prof. Eichhorst describes a phenomenon which he designates "Paradoxer Patellarschnen Reflex." The case was one of acute anterior poliomyelitis which was undergoing improvement. When the patella tendon was percussed the usual reflex was absent, but contractions occurred in the tibialis anticus, extensor hallucis longus, and in the extensor communis digitorum. No matter how forcibly the tendon was struck, the quadriceps remained immovable on both sides, while the other muscles.were quite active in their contractions, even when the percussions were reduced to the merest touch. This phenomenon was no doubt due to a highly exaggerated reflex irritability. The motility returned in the above-mentioned muscles, but the extensor cruris remained paralyzed. The muscular contractions were of considerable amplitude, but slow and protracted in character, resembling peristaltic movements. Each tap upon the patella tendon elicited from two to six contractions. These observations were verified independently by one of his colleagues. In explanation of this phenomenon, he says that the most direct reflex arc between the patella tendon and the extensor cruris was interrupted by the poliomyelitic process, while the reflex could spread itself, so to speak, through the lateral tracts in the adjacent centres for the individual leg muscles. W. M. L.

ANGINA PECTORIS OF HYSTERICAL ORIGIN.

Gilles de la Tourette in "Progrès médical," 1891, asks and answers the question how to distinguish angina pectoris of organic origin from that due to hysteria. The latter form is uncommon. Attacks are most frequent at night; they come on before the age of forty, especially when present in women, are accompanied by rapid pulse and irregular heart-beats. There are hysterogenic zones. Laughter or tears may terminate the attack. Hysterical angina pectoris is seen in two distinct forms, as in the organic diseases, the neuralgic and the vaso-motor.

L. F. B.

SUDDEN DEATH AS EVIDENCE OF RACE DEGENERATION.

The "Journal de médicine de Paris," June 5, 1892, gives a notice of Culere's recent brochure on sudden death in families of neuropathic taint, the nervous tendencies being divided into three groups. First comes insanity; then paresis; and the third class includes epilepsy. In some instances cited, sudden death occurred as early as the age of fifteen; at sixteen, and at eighteen. In others at thirty, thirty-three, and forty. The author considers the cause of death to lie in some insufficiency of nerve force, in a sort of nerve failure. Viewed in this particular pathological light, the prayer to be delivered from sudden death may have a deeper origin than mere superstition. L. F. B.

NEURASTHENIC ANXIETY AND ITS ACCOMPANYING PHENOMENA.

The "Archives de Neurologie,"July, 1892, gives Umberto Stephani's contribution to the foregoing subject. Disorder of emotion is the essential feature of neurasthenia, and from this result disturbances in the sphere of thought and conduct. Other phenomena that characterize nervous exhaustion, as exaggerated vaso-motor reaction, mental instability, whimsical moods, have for their base a condition of irritability and weakness of the nervous system. This irritability concerns the functions of the lower nerve-centres, and has to do with reflexes. The nervous weakness is an affair of higher functions. Besides these symptoms, others develop, as visual and auditory hallucinations. Though it may not be possible to establish a direct connection between such hallucinations and morbid fears, it can be proved that the latter grow out of special irritability of sensory centres. In this way they may be said to belong to the order of reflexes, and are but another manifestation of the general disorder of the nervous system. The least excitement, emotional or otherwise, causes violent reaction in the vaso-motor system; and, on the slightest provocation—harsh words, injustice, etc., unpleasant but well borne in health—appears neurasthenic anxiety. Slight external stimuli are also transmitted to sensorial centres, visual or auditory, giving rise to corresponding images that are often as intense as real perceptions. L. F. B.

MYXŒDEMA OF SYPHILITIC ORIGIN.

Referring to a German periodical, the "Gazette médicale de Paris," July 30, 1892, gives Köhler's report of a woman, forty-eight years old, in whom, in November, 1890, symptoms of myxœdema began to manifest themselves. In February, 1891, she entered Gerhardt's Clinic with well-marked mental symptoms, and enlargement of the face, neck, and hands. The tumor of the neck was a hard, subcutaneous growth, having numerous prominences. It was impossible at that time to tell whether it formed a part of the thyroid or not Incision showed that some of it was due to enlarged lymphatic glands. The patient returned in six months, and this time there was found a deep ulcer with undermined edges, just above the sterno-clavicular articulation, looking like the remains of a broken-down gumma. An incision proved this view to be incorrect; for the condition was one of syphilitic myositis. Anti-syphilitic treatment caused specific manifestations to disappear, including the enlargement about the thyroid gland, and removed also all evidences of myxœdema. The mental state improved as soon as the thyroid gland renewed its normal function, together with the other purely physical symptoms. The explanation of Köhler's case is that syphilis caused the growths about the thyroid. These in turn, by pressure, induced cessation of function in the gland. Syphilis, then, was an indirect cause of myxœdema. L. F. B.

THE INFECTIOUS ORIGIN OF EPILEPSY.

In a recent conference delivered in St. Antoine Hospital, Dr. Pierre Marie discusses the infectious origin of idiopathic epilepsy. For five years he has been convinced that in the great majority of cases this disease is the direct consequence of the action on the organism of an infection, following scarlet fever, measles, typhoid fever, tuberculosis, etc. Epilepsy is, he believes, less a disease than a "syndrome" linked to organic alterations of the nerve centres; these morbid changes being due to some infectious or other toxic agent. In support of this view, he refers to the numerous instances on record in which epilepsy (especially in early childhood) follows small-pox or some other contagious disease, and which, in common parlance, have been considered as awakening a latent predisposition.

Among the gross lesions which Dr. Marie regards as inseperably connected with epilepsy following constitutional infection, and especially infantile cerebral hemiplegia resulting from infection, are porencephalus and cortical sclerosis. There is in some cases atrophy of a convolution, or of an entire lobe. Chaslin, who has lately written a valuable paper on cerebral sclerosis (Arch. de méd. experim. et d'anatom. pathol, 1891. t. iii., p. 306), insists on this hardening and shrinkage of portions of the cortex as a constant accompaniment of idiopathic epilepsy, but he regards this "neuroglié sclerosis or gliosis" as being the index of a hereditary process. Dr. Marie is not convinced that alcoholism ever produces epilepsy. Since the publication of Charcot's researches on toxic hysteria, it may be affirmed that it is this neurosis and not epilepsy which is responsible for the larger number of cases of epileptoid convulsions attributed to alcohol. Some cases have been lately published by Siemens and by Tuczek which seem to show that a severe and peculiarly intractable form of epilepsy with manifest lesions of the cerebro-spinal nervous system is due to *ergotism.*

Dr. Marie terminates his article (Semaine Medicale, 1892, p. 284) in these words, which sum up his views:

"Epilepsy called idiopathic is almost always of infectious origin; its cause is, then, *exterior* to the individual and *posterior* to conception. From this point of view we ought to essay the employ of toxines of microbic origin, or of substances which act after the manner of the latter."

L. F. B.

LITHÆMIC PSEUDO-GENERAL PARESIS.

Klippel, in the "Revue de médecine," April 10, 1892, makes some interesting observations upon the three forms of general paresis that may appear in lithæmic subjects. First, there is the pure classic type. Second, general paresis of classic type, with other lesions (atheroma, etc.) that produce secondary symptoms. The third form is a pseudo-paresis, in which the syndrome is of general paresis is brought about by lesions distinctly different from those of the classic type. Diffuse inflammation is replaced by fatty degeneration of the capillaries and nerve elements. The history is given of a man of sixty years of age whose condition of pseudo-paresis could only be explained in this way. L. F. B.

ACROMEGALIA (MALADIE DE P. MARIE).

The "Edinburgh Medical Journal," January, 1892, contains a review upon Sousa-Leite's recent publication upon the subject of acromegalia. The first part of the book treats of etiology, symptoms, and treatment. The second and larger portion is the complete history of the thirty-eight cases published previous to 1890. Six post-mortem examinations are of special value. The most constant lesion found after death is increase in the size of the pituitary body. The nature of the enlargement has been shown by microscopical examination to be hyperplastic and not neoplastic. Other fundamental lesions consist in a hypertrophy of the sympathetic and a persistence of the thymus. The disease may be mistaken by the unskillful for osteitis deformans, myxœdema, elephantiasis, giant growth, etc. An abnormity closely resembling acromegalia, and only recently described, is hypertrophic pneumonic osteo-arthropathy, simultaneously and independently described by Marie in France, and Bamberger, Nothnagel's assistant, in Vienna. Several distinguished observers have recorded cases of hypertrophic pneumonic osteo-arthropathy as examples of acromegalia, notably the well-known case of the brothers Hagner, successively recorded by Friedreich and Erb. This abnormality that resembles acromegalia is a condition observed in patients subject to chronic pulmonary disease, as bronchiectasis, empyema. The hands, feet, and distal portions of the forearms and legs become greatly increased in size, as the result of chronic overgrowth practically confined to the bones of the affected parts. The process is regarded as a chronic ossifying periostitis. The hands and feet become enormous, the fingers longer and thicker, especially the terminal phalanges, so that the digits resemble drumsticks or bell-clappers. The nails are remarkably widened, increased in length, and curved. The long bones of the radius and ulna, and tibia and fibula, are greatly thickened by periostial overgrowth. Both Marie and Bamberger attribute the changes in the bones to absorption into the blood of certain substances from the diseased lungs. L. F. B.

A CONSIDERATION OF SOME POINTS CONCERNING THE PATHOLOGY, ETIOLOGY AND TREATMENT OF CHOREA AS SUGGESTED BY RECENT INVESTIGATIONS.

Dr. Joseph Collins, of New York, discusses chorea from a modern standpoint, in the July number of the "Charlotte Medical Journal."

As etiological factors, heredity is given first place; personal cases being reported where psychoses in the parents engendered chorea and other neuroses in the offspring. The author does not attempt to say what this hereditary transmission is, but calls attention to the fact, and with right, that in all these cases of functional nervous diseases, it must not be overlooked or slighted. As a rule, chorea is a disease of youth and adolescence, the greatest number of cases occurring between the ages of ten and fifteen. It was formerly supposed that the negro was exempt from this malady, but the writer has received verbal reports from Southern physicians and students asserting its frequent occurrence among that race. As to the relation between rheumatism and chorea the statistics are contradictory. No doubt there are many cases in which the genetic relationship is very close; still such a condition is not at all essential to its development. The writer does not take kindly to the germ theory which some authors are trying to fit to the disease—although he thinks changes in the central nervous system may follow the activity of innumerable morbific agents.

As to the pathology, the most rational theory is the one which ascribes a nutritional change in the motorial pathway, the result of irritation, foreign body, new formation, or disturbance in the vascular supply. As an etiological factor, fright has been given great prominence by writers on this subject. The writer explains its action by regarding it as a physical trauma which precipitates the disease, especially when there is an underlying inherited neuropathic disposition.

The treatment of chorea comprises, rest, quiet, the administration of Fowler's solution of arsenic, etc. For

the restlessness and insomnia, sulphonal and chloral are of benefit; the author has had good results with antifebrin in moderately large doses. Carbonate of iron and cod-liver oil should be administered whenever possible.
W. C. K.

TABETIC ARTHROPATHY.

The author (A. E. Sterne) draws the following conclusions in his inaugural dissertation written under Jolly's direction (Centrbl. f. klin. Med., No. 29, 1892):

1. The arthropathy and the spontaneous fractures occurring in tabetics are trophic changes due to a general disturbance of nutrition.
2. They stand in close relation to tabes dorsalis, even if they are not the direct result.
3. These affections possess some characteristic features. They may be, but rarely are, of traumatic origin.
4. They may appear at any period in the course of the disease, but seem to have a predilection for the preataxic stage.
5. From an anatomico-pathological standpoint the malady must be looked upon as peculiar. Its classification with arthritis deformans is hardly permissible. Partly, it is to be considered as a more or less modified form of arthritis deformans, frequently originating in a fracture at the joint.
6. The cause of this condition is to be sought for in a degeneration of the peripheral nerves. Neuritis of the spinal nerves stands in the same relation to the sclerosis of the posterior columns, as the degeneration of the cerebral nerves to a cerebral lesion; for instance, as the relation of retinitis and optic atrophy to a lesion in the corpora quadrigemina.
7. The ataxia, analgesia, and the brittleness of the bones, which markedly influence the course of the joint disease, are not to be looked upon as its cause. Any single one of these symptoms may be absent. The ataxia, especially, is absent in more than half the cases.

The treatment should be as conservative as possible. There are cases, however, where operative interference is indicated.
W. M. L.

CLINICAL.

NEURASTHENIA AND OCULAR TROUBLES.

Granclérment, according to the "Mercredi médical," August 17, 1892, states that during the past ten years many neurasthenics with ocular disturbances, as pain in the ball, photophia, accommodative asthenopia, etc., have come under personal observation. The more pronounced these are the more grave the neurasthenia and the slower its cure. L. F. B.

NEURASTHENIA TREATED BY "NERVOUS" TRANSFUSION.

The power of hypnotic suggestion finds an unconscious advocate in Constantin Paul. According to "L'Union médicale," February 18, 1892, twelve patients who received more than two hundred injections into cellular tissue of a glycero-aqueous solution of gray matter from a sheep's brain (sterilized with carbolic acid in Arsonoval's apparatus), escaped abscesses, acne, and reaction of any kind other than a slight temporary warmth. Sometimes a little lymphatic enlargement would follow and remain for a few days. These injections gave a sense of strength and well-being hitherto unknown. Muscular fatigue and weakness disappeared, and long walks became possible. Spinal pains and hyperæsthesia, headache and insomnia also departed. Functional cerebral weakness grew less by degrees. The author considers cerebral gray substance extract a veritable neurasthenic tonic that effects cures more rapidly than measures hitherto employed.
L. F. B.

FUNCTIONAL FACIAL ASYMMETRY.

Onanoff, in "Mercredi médical," December 23, 1891, calls attention to functional facial asymmetry. There is often marked hereditary predisposition to muscular asymmetry. Often one eye closes normally, but the other cannot be shut without synergic impulse from the first one. The side upon which ocular movements are defective presents apparent muscular defect as well, suggesting facial paralysis or vice of conformation. Examination reveals inequality of vision (astigmatism, etc.)

and the fact that normal sight is on the side presenting facial muscular insufficiency. The affected eye is on the side of the face that has normal muscular activity. If other troubles appear, as, for instance, facial paralysis and glosso-labial spasm, the paralysis develops on the side of muscular insufficiency and the spasm on the opposite. L. F. B.

OPTIC HYPERÆSTHESIA FROM CEREBRAL CAUSES.

In the "Neurologisches Centralblatt," No. 17, 1892, Freund reports an anomaly of the visual field hitherto undescribed, occurring in traumatic neurosis. This is a remarkable enlargement of the field for white and also for colors. Not only blue and red, but also the field for green extends to the usual limits for white. A case of recent traumatic hysteria showed this phenomenon exquisitely developed. Repeated subsequent examinations confirmed the accuracy of the observation. The illumination was ordinary daylight. There was evidence of hyperæsthesia of other senses, and various areas of cutaneous hyperæsthesia.

Hysterogenic zones were also present. There was no intraocular cause. Ophthalmoscopic findings negative. In his opinion this condition may probably also arise in other irritative states of the cerebral cortex.

W. M. L.

ON TRAUMATIC NEUROSIS.

In the "Deutsche Zeitschr. f. Nervenheilkunde," Bd. i., Hft. 5 u. 6. Schultze reports a new series of twenty cases, and remarks in the introduction, that in accord with Seeligmüller he deems it inadvisable to have more than three or four such cases in the clinic at the same time, as so many mutual influences are apt to enhance the difficulty in judging of the genuineness of their complaints.

The individual symptoms upon which so much stress has recently been laid are thus analyzed:

1. *The Visual Field.*—The visual field was found absolutely normal, fourteen times for white and colors in eighteen cases. In the four others the examination had to be abandoned. In one, on account of lack of intelligence. In another where the patient was undoubtedly

weak-minded, the field was entirely distorted. In a third, who had organic disease of the central nervous system, both fields were asymmetrically contracted. In a fourth (a case of alcoholism), the left field was normal, but the right varied at different examinations. From these observations he feels less justified than formerly in attributing to this symptom any essential value in the diagnosis of a nervous disease due to trauma. In the examination of these cases we evidently are not dealing with a genuine contraction of the visual field in the sense that in the peripheral portion of the normal field there is no vision at all, but only with an indistinct perception. Otherwise we could not explain how these patients can so quickly find their way in the streets. Furthermore, the method of testing is of importance, especially whether the patient designates the moment when he gets a glimpse of white or the color, or whether he indicates when he clearly sees the outlines of the index. Even setting aside the possibility of intentional deception, the result of the examination depends in a great measure upon the subjective judgment of the patient, and, to say the least, cannot be accepted as an objective result. Hence, this symptom is not to be considered of paramount importance.

2. *Changes in Sensibility.*—In one case, the tactile sense was diminished to all forms of irritation on the side involved. In another, only on the affected forearm and hand. However, in these two cases, exaggeration of the suffering had to be admitted. *There is nothing pathognomonic in the presence or absence of sensory symptoms following traumatism.*

The other observations of Oppenheim cannot alter this conclusion, even should we assume a "Charité type," with extensive anæsthesias and a type without them.

3. *Psychical Symptoms.*—Schultze also doubts the frequency of psychic peculiarities. In none of his cases has he noticed the depression so often found by Oppenheim. He is of the opinion that the diagnosis of mental derangement is often made with unwarrantable haste.

4. *Frequency of the Pulse.*—The symptom described by Mankopff, that upon pressure over a painful point the pulse is accelerated, is looked upon by S. as an objective symptom where it is produced under the proper conditions.

5. *The Condition of the Reflexes.*—The significance of increase in the reflexes has also become problematical

since Schultze and Langard have observed that the reflexes may be exaggerated to the highest degree in a condition of mental excitement and in chronic diseases, particularly in phthisis.

6. *The Various Forms of Disease Observed in Trauma.*—As on former occasions he earnestly advises that these nervous disturbances should not be accepted as exclusively due to trauma, but that etiological factors should be considered. In the twenty cases there was one with typical chorea minor; four with Ménière's disease, and one with sciatica. In others, the symptoms could be ascribed to pulmonary tuberculosis or to arterio-sclerosis with cardiac hypertrophy.

7. *Simulation and Exaggeration.*—He points out the great difficulties, and analyzes several of the most doubtful symptoms, and again emphasizes, that in general the best means for determining the correctness of the patient's statements is by accurate and assiduous methods of observation. Among the twenty cases there were two of simulation; and in six patients the symptoms were in a great measure highly exaggerated.

8. He does not consider the prognosis unfavorable, and discourages the impression that the diagnosis of "traumatic neurosis" is synonymous with a death-warrant. The essay closes with seven well-selected and instructive histories (Centrbl. f. klin. Med., No. 30, 1892).

W. M. L.

TABES AND PARESIS.

In "Médicine moderne," June 16, 1892, there is an abstract of Rendu's paper with the foregoing title. The clinical association of tabes and paresis is now beyond dispute, though attempts have been made to prove some clinical differences between tabetic symptoms that are epiphenomena of paresis and those of true ataxia, before cerebral symptoms appear. These fine distinctions vanish before an analysis of facts. In two cases cited in the paper, the symptoms are those of classic ataxia, up to the moment that evidences of diffuse encephalitis appeared. According to Raymond, true tabes, as we know it, does not always confine itself exclusively to lesions of the posterior part of the cord, but extends into the motor cells and lateral tracts. Thus it would appear there is often in ataxia a systemic disease, a tendency to diffusion of the sclerotic process. Because certain isolated symptoms appear in subjects attacked by true ataxia and general paresis, there is no reason to seek other diagnosis and invent a special type of disease. At present it is impossible to distinguish between syphilitic and non-syphilitic ataxia. Theoretically, as Ballet says, there are probably different kinds of locomotor ataxia;. but their differential characteristics are as yet purely hypothetical. Certain etiological factors that produce tabes and paresis are alike, namely, alcohol and syphilis. Admitting that heredity plays a part as important as these, is but to emphasize another point in common. Upon the question of morbid anatomy and extension of morbid processes opinions are divided. On histological grounds Ballet and Joffroy reject the idea of any identity of tabes and paresis. Differences of opinion in this matter are more apparent than real, for when these abnormities are both present, the symptoms are complex, involving the cerebral and spinal vessels, the neuroglia and nerve cells. The question at issue is whether the initial lesion begins in the vessels, the axis cylinder or the nerve cells. Raymond considers the vascular lesion predominant. Ballet finds that the beginning of the morbid process is in the neuroglia. And Joffroy inclines to the opinion that the cerebral cells are primarily at fault in paresis, the interstitial sclerosis being secondary. Naturally there is some disparity in conclusions based upon premises so diverse. Raymond says, endarteritis exists in the cord as well as the brain and sclerosis follows in consequence, diffuse in the brain and systemic in the cord, the morbid process being identical because the disease is the same though manifested in different regions. Ballet, on the contrary, considers locomotor ataxia a myelitis of peri-cylindrical origin, neuroglia and spinal vessels being implicated secondarily. Paresis, on the contrary, is a diffuse encephalitis of probable vascular origin. The fundamental abnormity is, therefore, distinctly different, and the two diseases bear no relation other than chance association. Joffroy looks upon the cell as primarily imperfect. General paresis and locomotor ataxia are parenchymatous inflammations of the nervous system. This community of cause might have been expected to throw some light upon the identity of the morbid process. Joffroy, on the contrary, rejects the idea, saying that ataxia is a systemic lesion while paresis is a diffuse lesion. The two conditions may be associated, but this is mere coincidence. At the present stage of knowledge it would be difficult to prove that locomotor ataxia begins in the axis cylinder, and that paresis is the outcome of abnormal neuroglia and abnormal blood-vessels. Personally, Rendu, the author of the paper, inclines to the belief that in visceral and neural sclerosis the parenchyma of the cell is primarily at fault, and that connective tissue and vascular proliferations are secondary lesions. Grandmaison furnishes histological proof of this in induced (experimental) hepatic sclerosis. This may be equally true of cerebro-spinal sclerosis, though without definite proof in the present incomplete stage of pathological anatomy. L. F. B.

RECENT RECORDS OF PARESIS.

In the "Gazette médicale de Paris," February 13, 1892, there is a note on Dr. Henri Evard's "Contribution to the Study of the Etiology of General Paralysis," based upon fifty-two carefully recorded cases. Judging from these the author inclines to the belief that the most frequent causes of paresis are, first, a hereditary tendency to congestion and to conditions that predispose to congestions. The French journal calls attention to the fact that Evard neglects to mention lithæmia as a factor, and states that this is the origin of the congestive tendencies that he so readily recognizes. The second and occasional cause of paresis in a predisposed subject, is alcoholism. And the third, active and unmistakable, is syphilis. This view is opposed to that of Charcot, who looks upon both alcoholism and syphilis as exciting causes of paresis in persons predisposed by heredity to vaso-motor and trophic disturbances. The foregoing diseases in the parents may produce the paretic constitution in the child, and in this way induce paresis. Thus can be explained the existence (of which eight cases have been recorded) of general paralysis or diffuse meningo-encephalitis in adolescents. Paresis in women resembles that of children; and is manifested in both instances, psychically, as a primary dementia.

The duration of paresis is considered at some length by Salgó (Centralb. f. Nervenh. u. Psych., 1891), who divides this disease into four different forms, each classified according to the nature of its various stages and the particular course that it runs. The first is the *foydroyant* form that the author identifies with certain cases of rapid and fatal amentia. The second is depressive and hypochondriacal, in which the duration is somewhat like the foregoing acute form. Death occurs early on account of refusal of food. There may be periods of expansive ideas. A succession of expansive and depressed states constitutes Mendel's circulatory paresis, which Salgó refuses to recognize as a distinct entity, considering it without practical and scientific value. The third form is characterized by a longer duration of ameno-mania and delusions of grandeur and a more regular general course. Nevertheless, cases of this kind may run a sufficiently rapid course, dependent in this particular upon the paralytic symptoms. Remissions are frequent, and these naturally increase the duration of the disease. Remissions can only be expected when there is embarrassment of speech. Death is usually consecutive to marasmus following subacute attacks of exaltation and violence. Cerebral œdema, apoplectiform, or epileptiform attacks are also frequent causes of death. Often between a period of remission and reprisal there is an intermediate state of *folie raissonante* that bears a striking resemblance to the period of termination in cases of long-standing mania. The fourth is that form of paresis of longest duration, in which dementia and paralytic symptoms show parallel development and in which there are no delusions and no ideas of grandeur. Cases of this kind are common, and there is not the slightest need of isolating or incarcerating them. They are quiet, not dangerous, and easily cared for at home. This fourth form presents the typical course of paresis. Its clinical facts are confirmed by autopsy.

Salgó insist upon the appropriate analogy existing between paresis and chronic brain changes due to local lesions or to general constitutional diseases, such as senile changes in the brain substances and meninges, cerebral hemorrhage, local softening, cranial and cerebral traumatism, chronic alcoholism, hematoma of the dura mater, and cerebral syphilis. These pseudo-paretic or symptomatic groups run a very different course from true paresis, have a distinctly different pathological anatomy, and must not be confounded in any way with general paralysis. L. F. B.

OBJECTIVE SYMPTOMS OF NEURASTHENIA.

Among the objective symptoms of neurasthenia which we have gradually learned to recognize in addition to the many subjective ones, the following deserve special mention: Pale complexion and emaciation induced by derangement of sleep and nervous dyspepsia; pronounced redness of the conjunctivæ and the ears; dilatation and frequently transient inequality of the pupils; incomplete closure of the eyelids when directed to stand with closed eyes; fibrillary tremor in the orbicularis oris and in the musculature of the tongue; weakness in convergence of the eyes; unconscious and aimless movements of the extremities; increase of the skin and tendon reflexes (loss of knee-jerk was not observed); pronounced mechanical irritability of the facial nerve; increased electrical irritability of nerves; weakness and indistinctness of speech; manifestations of paraphasia and verbal amnesia; changes and errors in writing; a disposition to abnormal laughing and yawning; acceleration and irregularity of heart's action; abnormal prominence of the temporal arteries in consequence of vasomotor disturbances; nervous dyspepsia with anomalies of the motor and secretory functions of the stomach, with eructations and vomiting; nervous constipation and diarrhœa; polyuria, phosphaturia, and oxaluria, moreover a uric acid diathesis of long duration. The latter may be associated with a neuropathic condition either congenital or acquired, or with the neurasthenic state (Löwenfeld, Neurolog. Centrbl., 1892, No. 17). W. M. L.

A CASE OF HUNTINGTON'S CHOREA, WITH AUTOPSY.

The following case is reported by Drs. Kronthal and Kalischer in the "Neurologisches Centralblatt," Nos. 19 and 20, 1892. The patient was a woman, forty-five years of age. The chorea began in her thirtieth year. One sister was similarly affected at the same age. Her grandmother, mother, and mother's cousin also suffered from chorea. Her father died of phthisis. The patient showed all of the symptoms of the disease, together with endocarditis. Eight days before death she fell, striking her head, and producing a fracture at the base of the skull. The autopsy was made forty-eight hours after death.

After an exhaustive and elaborate description of the anatomical findings, and a review of the literature of the subject, the authors summarize the result of their histological examination, which was made in Mendel's laboratory (excluding those conditions found at the autopsy which were the immediate cause of death).

1. Adhesion of the dura to the skull, especially in the frontal region.

2. Firm adhesion of the dura with the pia mater.

3. Numerous localized areas of thickening of the pia with cell infiltration. Increased vascularity and connective tissue formation; lamellar formation over the convexity of the cerebrum, cerebellum, and the anterior surface of the cord.

4. Adhesion of the pia to the cortex on convexity, especially over the frontal lobes and the central gyri.

5. Slight atrophy of frontal lobes, *i.e.*, remarkable smallness of the convolutions.

6. Abundance of vessels, some normal and others thickened in the cortex, with multiplication of nuclei.

7. Lacunæ and cavities in the lenticular nucleus; extravasation of blood and pigment formation around thickened vessels which contain thrombi.

8. Anomalies in the tegmental nucleus of one side.

9. Hemorrhage in the region of the exit of the oculomotor fibres.

10. Punctate degeneration in both cerebral peduncles.

11. Circumscribed degeneration (sclerosis) in the central (ventricular) gray matter at the level and below the corpora quadrigemina.

12. Slight degeneration in the facial and auditory nuclei, the hypoglossal nucleus and roots, and the ascending root of the trigeminus of one side.

13. Diffuse degeneration of the pyramidal tracts of the crura cerebri.

14. Diffuse degeneration of a milder degree in the lateral and anterior columns of the entire cord, extending to the upper lumbar segments; degeneration of the internal portion of Goll's columns in the lower cervical and upper dorsal cord.

15. Slight degeneration of the cells in the anterior horn, the cells of Clarke's columns and the anterior roots.

16. Circumscribed sclerosis in the commissure, between the central canal and one anterior horn in the mid-dorsal region.

17. Absence of chromatogenic substance in the ganglion cells of the cortex.

18. A very slight amount of degeneration in the peripheral nerves.

In conclusion, the writers state that "we do not feel justified in assuming that the pathological changes in the nervous system found in the present case, are the cause of the chronic chorea. We hope at some future time by the most accurate histological study in other cases, to reach a decision as to whether any of our findings are at all frequent or even typical in this disease." W. M. L.

JACKSONIAN EPILEPSY OF SYPHILITIC ORIGIN.

Bernheim reports a case in the "Revue médicale de l'Est," January 1, 1892. Epileptic attacks following a blow upon the head were frequent. Ten years earlier the patient, a prostitute, thirty-four years old, had been treated for syphilis; treatment renewed in form of mercurial inunction and large doses of iodide of potassium, which stopped the epileptic attacks. Two years later the patient again applied for relief of epilepsy, which had appeared after violent emotion. The relapse being due to purely psychic causes and local in its manifestation (consciousness and respiration intact), it was considered functional only, and not the result of extension of organic processes. Every cortical brain lesion being an epileptogenic centre, it can be stimulated by any dynamic influence. Attacks thus brought about may disappear spontaneously or give way to some other dynamic influence, as hypnotism, which proved efficacious in the case recorded. L. F. B.

THE ROLANDIC AREA CORTEX.

Such is the title of a paper read before the Neurological Society of London, and contributed to the summer number of "Brain." The author, Dr. Eugene Dupuy, is well known in connection with the forcible opposition he has maintained against the conclusions drawn by the larger portion of neuro-physiologists, relative to the electrical irritability of the cortical-motor areas, and the genetic significance of the movements resulting from such stimulation. In the present article he endeavors to maintain and fortify his position. He states that so far no other agent than electricity produces any effect on the motor apparatus of animals when applied to the cortex. The points which, when excited by electricity give rise to a motor action, coincide with spots where arteries with nerves penetrate into the white matter or strands of fibres. He reiterates his theory that electrical stimulation of the cortical motor areas is manifested in motion through the action of electricity upon white matter through blood-vessels and nerves accompanying them. The fact that the experimenter is able to predict the effect to follow when a current of minimum strength applied to certain spots in the cortex of the brain of certain animals, only goes to show that certain points of the gray matter of the convolutions are situated in the lines of the least resistance. He has shown that the pia mater over the Rolandic convolution is almost a complete network of vaso-motor fibres and cells and blood-vessels which penetrate into the convolutions. One system of blood-vessels only ramifies and ends in the cortex proper, the other enters the white substance by means of larger vessels accompanied by nerves and ganglion cells. By virtue of this anatomical condition and its connections, he considers is due the motion resulting from electrical stimulation.

The criticisms of Putnam, particularly of Frank and Ferrier, he endeavors to controvert, but probably it will not be entirely satisfactory to those who have opinions on this subject. Putnam's well-known experiment to upset Dupuy's idea that electrical irritation acts through the blood-vessels, nerves and white fibres, which consisted in slicing off the area of the cortex which is known to be stimulable, and after slicing, leaving them *in situ* and repeating the excitation, the same current is insufficient to call forth motor action. This Dupuy considers inconclusive on account of the physical conditions of the two experiments being different. The writer states, likewise, that he has shown that if the cortex is sliced off and the same minimum current used to ascertain the production of motor action be applied not directly, but after a short time, to the cut surface of the fibres, results identical with those in the first experiment are obtained, when using the same current as applied to the cortex proper before the slicing off.

Dupuy cites several experiments to prove the truth of the idea that the cortex contains centres which govern motion at all in the sense admitted by most. He cannot think it possible of a motor impulse being generated in so-called motor cells of the cortex, and traveling necessarily through and into the pyramidal tracts and cross into the cord. The details are too extensive to be quoted here, but they are worthy of attention.

Dupuy is very firm in his opinions that the cells of the cortex do not cluster into well-defined centres, either motor or sensation centres. And, likewise, that the pyramidal tracts are not the necessary connecting links between the cortex and the outgoing nerves of the cord. The substance of the article is a reiteration of the opinions previously published and known to be held by the author, which he again attempts to substantiate by logic and experiment. It is not probable, however, that very great success will attend this endeavor as the result of this most recent contribution. J. C.

SPECIAL SENSE IN EPILEPSY.

"In Médecine Moderne," August 4, 1892, there is mention of Féré's experiments in regard to special sense in epileptics, especially taste and smell. About sixty out of every hundred examined showed diminished appreciation of odors and flavors. L. F. B.

THERAPEUTICAL.

THE TREATMENT OF EPILEPSY WITH THE BORATE OF SODA.

Dr. Alfredo Pastena, after the employment of this drug in eight cases of epilepsy, comes to the following conclusions:

The borate of soda diminishes the number of attacks, and in many cases they are suspended for months at a time.

The best results are obtained in the classic form of epilepsy, and especially where the attacks are of long duration; also in the lighter forms, as epileptic vertigo.

The drug has no deleterious effect upon the general system, neither upon the digestive organs.

It does not act by paralyzing the motor centres, as some suppose, since in epilepsy with consecutive motor spasms, the borate of soda has little if any effect. Moreover, having administered it in mania to prove the correctness of the above-mentioned hypothesis, it gave wholly negative results. It has no marked preference for nocturnal attacks, as Stewart supposes, since patients subject to diurnal attacks have had during this treatment nocturnal attacks, and *vice versa*.

As to the dose, the author begins with 4 grammes daily, mixed with 200 grammes of water and 20 gr. of syrup. In some cases he increased the dose until the patient was taking 7 grammes daily, and with the exception of one case, he has met with no irritating effects upon the gastric mucous membrane (Annali di Neorologia, Napoli, Fas. i., ii., iii., p. 123). W. C. K.

NEURASTHENIA.

In the busy struggle for existence the battle of life is no longer fought with the hands, but by the brain. The demands made by the efforts of the brain-worker upon the nervous system are excessive. No matter what powers of endurance the body may possess, the restless tenant exhausts them. Especially is this true of those slightly built persons with well-vaulted foreheads and small viscera. Their restless energy brings about a breakdown; the assimilative organs cannot supply the nutritive pabulum of the nervous system in sufficient quantity, the store becomes exhausted, and then the brain power gives way; the work that once could be accomplished with ease becomes a grievous task, and a little later on the capacity to discharge it is no longer present. The patient is sent away for rest. After long rest and appropriate food the nervous system is once more for a time equal to the demands likely to be made upon it.

The treatment of mental overwork is absolute rest, with a generous diet that will make fat. As the nervous substance is largely made up of fat with phosphoric acid (lecithin), its nutrition must be maintained by Proteinol. Adults should take one tablespoonful one hour after each meal. Give milk puddings, cream and Seltzer water, salads with oil, yolk of egg in sherry wine. Be guarded in allowing nitrogeneous diet, but freely give a carbohydrate and a diet that will make fat. Continuously give proteinol, and enjoin absolute rest and change of scene.

Society Reports.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, held at the New York Academy of Medicine on Tuesday Evening, November 1, 1892.

Dr. M. ALLEN STARR presented two teeth extracted from the jaw of a patient who suffered from trigeminal neuralgia. There was marked exostosis of the roots of the teeth, and their extraction resulted in a complete cure of the neuralgia.

A CASE OF SPASMODIC WRYNECK.

Dr. J. A. BOOTH presented a case of spasmodic wryneck. The patient was a married woman, twenty-six years old. General health fair up to the date of the present trouble. No history of rheumatism or malaria. During the early part of last May the patient had a miscarriage and was quite weak after this for some time. Menses have not appeared since June 12th, and she is now in fourth month of pregnancy. Present trouble appeared in June, and commenced with severe pain in back of head and a spasmodic turning of the head over left shoulder. The pain gradually disappeared, but the other conditions grew worse. There is a more or less tonic contraction of the right sterno-mastoid and trapezius muscles. Examination fails to reveal any other nervous lesion. Right sterno-mastoid very much hypertrophied. Treatment thus far has consisted of daily hypodermic injections of atropia sulphate, according to the plan advised by Dr. Leszynsky. The patient has only been under observation for a few days, and Dr. Booth said he has not yet seen any improvement in her condition.

Dr. LESZYNSKY said that in a case very much similar to the one reported by Dr. Booth he gave the atropine injections, and the patient got well. In that case he carried up the injections to one-sixth of a grain before marked improvement followed. The patient was kept under continual observation, and the doses were rapidly increased.

Dr. G. M. HAMMOND said that the majority of these cases are very difficult to cure. He has seen a number which appeared to him to be psychical in their nature. Some of these patients seem to derive much benefit from the use of the fluid extract of conium, given in large doses.

Dr. STARR confirmed the statement of Dr. Hammond that conium has a decided effect in some of these cases. In one case that came under his observation the spasmodic action of the muscles was quieted by pressing upon a certain point on the back of the skull. Dr. Shaffer devised a very ingenious mechanical contrivance, by means of which the patient, by a movement of the arm, could bring pressure to bear on this point on the skull, and at the end of six months he was perfectly well. This case appeared to be psychical in its nature, as suggested by Dr. Hammond. As far as atropia is concerned, Dr. Starr said he had employed it in one case, carrying the dose up as high as he dared, but no benefit followed.

Dr. E. D. FISHER said that the only thing he has found to be of any value in these cases is either some form of mechanical treatment, getting the parts into as comfortable a position as possible, or the galvanic current, which gives relief to some extent. Where these cases are acute he believes there is a nervous element in them, and sometimes they do get well under these injections of atropia. Where they do not get well, he is rather inclined to try operative procedures. Operation, however, should be considered as a last resort.

Dr. JOSEPH COLLINS presented a case with the following history: Male; Irish; forty-seven years old. He had always been in fairly good health until eight or ten weeks ago. He was formerly employed in the English mines, working under compressed air. Ten weeks ago he suddenly lost the power of all parts of his body, excepting his head. He did not lose consciousness. He remained in this condition for four weeks, being unable to move his hands or his feet, or do the least thing to help himself. At this time he also suffered greatly from pain, which he describes as a burning or scorching pain. At the end of the four weeks he was able to walk about a little. The right side of his body improved more rapidly than the left. At the time of the attack he also had some trouble with his sphincter muscles. At present only the vaso-motor symptoms are left. Dr. Collins presented the case as one of hematomyelie.

Dr. LESZYNSKY said he saw the patient presented by Dr. Collins, but did not examine him. From the history given he could not agree with Dr. Collins' diagnosis. He has seen two or three cases of hemorrhage into the cervical portion of the cord, and in those cases the paralysis came on suddenly, and the patients were left with some atrophy. The history in this case seemed to point to a multiple neuritis.

Dr. FISHER referred to the fact that men who work in places where there is considerable atmospheric pressure sometimes become affected with symptoms like those in Dr. Collins' case. He saw a man the other day, a driver by occupation, who claimed that not infrequently men in his class of work become paralyzed for four or five days or a week, and then recover. He had had two or three such attacks within the past twenty years.

Dr. G. M. HAMMOND presented a patient with the following history: Family history unimportant, with the exception that the man's father was a dipsomaniac; the patient himself was formerly a hard drinker. From the time of his marriage, eight years ago, he indulged excessively in sexual intercourse, usualy performing the act daily. Contracted syphilis about twelve years ago. Early in 1891 he began to suffer from severe and continuous occipital headache; this pain afterward left the back of his head and appeared in the forehead. In the fall of 1891 complete ptosis of the left eyelid suddenly developed. With the advent of the ptosis the headache disappeared and has never returned. Has had no double vision, although the muscles of the orbit supplied by the third nerve were all paralyzed. The fourth and sixth nerves were not affected. The third nerve paralysis has been partially recovered from, but there is still slight ptosis and paresis of the superior and inferior recti muscles. Vision in the left eye gradually failed, and an opthalmoscopic examination reveals evidence of gray degeneration of the left optic nerve. In March, 1892, the man was suddenly taken with a peculiar affection of speech. There is no aphasia in the proper acceptation of that term. The patient can read and write, comprehends all that he sees and hears, and expresses his ideas and words in logical sequence. The peculiarity of speech consists in the explosive character with which the words are delivered, and the rapidity with which the sounds are uttered. One word follows another so closely that the full time is not given for the proper enunciation of each syllable. The words are therefore clipped, and the syllables are "jerked out" as if from a machine. This form of speech, Dr. Hammond said, differs entirely from stammering and stuttering. The former is caused by a spastic spasm of the muscles of respiration, while stuttering is caused by mobile spasm of the lips and tongue. At the time his change of speech came on, he also had difficulty in walking; he walked like a drunken man, and this still persists to a certain extent. During the past eight months he has been strictly temperate. He was under treatment for several months, receiving as high as 135 drops of a saturated solution of potassium iodide, three times daily, together with small doses of bichloride of mercury, but this did not improve his condition at all. Recently he has been troubled with insomnia, with disagreeable dreams and depression of spirits. As to diagnosis, Dr. Hammond said he did not think the change in the man's speech was due to any physical lesion; that we know of no physical lesion that would bring about such a condition. He considered it a psychical condition of a hysterical nature.

A STUDY OF SOME OF THE DRUGS USED IN FUNCTIONAL NERVOUS DISORDERS.

Dr. ARTHUR A. BOYER read a paper on this subject. He stated that in the treatment of functional nervous disorders, as in other fields, there is a great temptation to secure rapid and striking results; and that on this account there is a disposition to give secondary consideration to the means employed, and too often to forget the rigid scrutiny to which they should be subjected. There are two things that impress the student of therapeutics as applied to functional nervous disorders: first, the necessity for pushing familiar drugs to their physiological limits; second, the large number of new drugs reported as accomplishing startling results without a sequence of dangerous or unpleasant symptoms. It is not unreasonable to suspect that such reports are based on insufficient data, and that better acquaintance with these drugs will reveal elements no less dangerous because insidious.

The first drugs referred to by Dr. Boyer were those used in chorea, and foremost among these is arsenic. There is a large class of patients who have been taking moderately small doses of arsenic, and who bear characteristic marks of their treatment. The skin is pale, often sallow to the point of muddiness; the air is languid, the gait rather uncertain, the hands moist, flesh flabby, appetite poor, habit constipated, heart's action feeble, frequently accompanied by palpitation or irregularity, pulse soft, respiration shallow. Examination of the muscular system reveals a lack of tone. In general, the condition of the patient is what might be called below par. Dr. J. Hutchinson has in several of his monographs called attention to the harmful effects of long-continued use of the drug. The probable action of arsenic is two-fold: primarily a depression of the spinal centres by reason of the poverty of the blood; in the second case, and to a much less degree, a reduction of the working power of the muscles by the direct effect of the drug.

The next drug to which Dr. Boyer referred in his paper was chloral. The cases of chorea in which it has proven of most value are those of the acute and violent form, where an immediate cessation of spasm is requisite to the safety of the patient. The theory for its use was the fact that in sleep choreic movements usually cease. Chloral was quoted as a pure hypnotic. The large amount of chloral required in such and similar cases, however, to produce sleep, certainly creates a doubt in the mind whether the effect is produced through the hypnotic action of the drug, so much as by the profound depression of the brain and spinal centres and direct action on the muscles themselves. Dr. Boyer also referred to the use of the antipyretics, namely, antipyrine, phenacetine, and exalgine, in chorea. He stated that these, as well as all other drugs that have won a reputation in the treatment of chorea, possess, as their most prominent feature, the power to cause a depression of sensation and motion to the point of paralysis; that in doses short of this effect, they are not of much value; and that when they are administered in doses sufficient to check choreic movements, other systemic effects, such as general depletion of the forces of the body, vascular dilatation and cardiac and respiratory depression attend their specific action.

Dr. Boyer next referred to the treatment of insomnia. The drugs that have proved most efficacious in producing sleep, he said, are chloral and sulphonal. The large number of persons suffering from insomnia, who find their way to the specialist, demonstrate only to frequently the failure of the hypnotics to accomplish what was expected of them. They comprise two classes; those who are taking chloral and sulphonal, yet cannot sleep; and those who sleep when they take the drug, but consult you for "extreme nervousness." These people have certain traits in common. The first thing that attracts your attention is the hard, set features, the fixed look, the dull heavy eyes, often congested, the dusky pallor of the complexion, the expression of despair. The face never relaxes into a smile. The patient walks as if in a trance, and talks in an automatic manner. The mental conditions differ somewhat in chloral and sulphonal. In the former there is more excitement and irritability; in the latter, more despair. In some cases trembling is observed. Chloral has also a peculiar effect on the ocular muscles, disturbing their proper relations to each other. Daily contact with patients who have been taking chloral and sulphonal for insomnia, Dr. Boyer said, has forced upon him conclusions that go far from supporting the flattering opinions commonly expressed on the subject. A large number of patients who present themselves for treatment will be found to be suffering as much from the drugs they have been taking, as from the original disorder, and an absolute removal of all drugs will serve not only to elucidate the condition, but frequently also to give much relief to the sufferer.

Dr. C. A. HERTER said he thought arsenic acts rather differently upon the nutrition of choreic patients than was expressed in Dr. Boyer's paper. In studying a good many grave cases of chorea, it was found that the quantity of uric acid excreted was very much increased. A peculiar reddish coloring matter was also found in the urine. In the course of treatment of chorea by arsenic, the uric acid was very much diminished, and the patients recovered. The antipyretics also reduce the excretion of uric acid, and they do so in doses that are far from being toxic. Dr. Herter thought that Dr. Boyer was rather too extreme in his condemnation of the drugs named.

Dr. GEORGE W. JACOBY said that he agreed with Dr. Boyer in so far that we should use the drugs mentioned by him with a certain amount of judgment. In regard to the statement made by Dr. Boyer that arsenic has been known to produce multiple neuritis, he would like to know how many cases of that disease have come under the observation of the members present caused by the medicinal doses of arsenic. He considered Dr. Boyer's paper too sweeping in its nature.

Dr. C. H. BROWN said he considered arsenic one of the best remedies we have at our command. In chorea it is extremely useful, and he has never seen it do any harm. As regards chloral, it is a dangerous drug, but so is opium; but to say that they are not valuable in functional nervous diseases is going very far indeed. Dr. Brown said he does not use chloral so much now, since we have sulphonal and chloralamid, but he still employs it occasionally and has never seen any harm follow. As regards the poisonous action of these drugs, he does not see the necessity of giving them in such large doses. He had used sulphonal in a case of insomnia, constantly every night, in 15 to 20 grain doses, without apparent damage further than occasional slight inco-ordination in the morning, which soon wore off.

Dr. STARR said that he has been unfortunate enough to produce multiple neuritis in two cases with arsenic; during the period these cases were produced, however, he had been giving the drug quite continuously and thoroughly in 420 cases of chorea, so the proportion is small. He considered the warning contained in Dr. Boyer's paper as a timely one. We are too apt to overlook the effects of drugs, and give them as a matter of routine. Still, it seemed to him that many of the symptoms ascribed by Dr. Boyer to the arsenic were chiefly those of the chorea itself, and are due to the disturbed nutrition, the anæmia, etc., which underlie the choreic manifestations.

Dr. COLLINS said he was rather inclined to think that Dr. Boyer has not taken a pessimistic view of this subject, but that some of the members misunderstood the spirit of his paper. In Europe, particularly in Germany and England, where these synthetical drugs are much more largely employed than here, the proportion of cases in which injurious effects have followed their use is by no means small. Dr. Boyer has perhaps overrated the poisonous properties of some of the drugs, but his warning comes in good time.

Dr. BOYER, in closing the discussion, said that he was sorry to see that the general impression created by his paper was that he wished to advocate the withdrawal of all drugs from our practice. The purpose of the paper was rather to study the mode of action of certain drugs as applied to special disorders, and in the manner commonly employed in such cases and to suggest a more careful examination into the action of some of the newer drugs. Dr. Herter is quite correct in his remarks concerning the decrease of uric acid after the administration of arsenic in small doses and for a short time. This point was covered in the first part of Dr. Boyer's paper, where he referred to the tonic action of the drug in checking retrograde metamorphosis.

Replying to Dr. Starr's objection that the symptoms attributed to the drug might have been mistaken for the symptoms of the disease, Dr. Boyer said that his statements were the result of observations on cases in his practice, and were arrived at by the removal of the drug in question.

Dr. LESZYNSKY presented a patient with the following history: Female, single, aged eighteen. At the age of four years she fell to the pavement from a fourth-story window. Taken to Bellevue Hospital, where she remained for seven weeks. She was unconscious for two weeks following the fall. Since the time of the accident she has been weak on the right side, and until her eleventh year she was unable to grasp and hold objects with her right hand. Until her fourteenth year she suffered from epileptic attacks, from two to five daily. There was right hemianæsthesia and slight hemiparesis on the same side. She states that she has occasional fallen spells, and complains of deafness of the right ear. There is a large opening in the skull over the left parietal bone, extending to the median line. Her present condition is as follows: The girl is well nourished and healthy looking. There is complete flaccid paralysis of the right upper extremity, and paresis of the right lower extremity. Faradic irritation normal. There is some evidence of right facial paresis. Absolute right hemianæsthesia, involving face, cornea, tongue and mucous membrane. No marked atrophy in muscles. Knee-jerks and other reflexes normal. No spinal nor ovarian tenderness. Both pupils normal in size and reaction. Loss of taste on right side; the smell has not been tested. The hearing on that side is also much impaired.

Dr. LESZYNSKY said he employed copper plates over the right arm, leaving them on for forty-eight hours, but without any effect. The question arises in this case as to how many of these symptoms are organic and how many functional? The character of the paralysis on the right side would exclude the ordinary form of hemiplegia. The fact that there is evidence of facial paresis would show that it is organic to some extent. The later attacks she had were undoubtedly hysterical in character. The opening in the skull is really the most interesting feature in the case. As a matter of course, we would assume that she had been trephined, but such is not the case. It has been learned that no operation was done on the skull, and Dr. Abbe has confirmed this after a careful examination. The question arises whether this cavity is not due to bone absorption, due to obliteration of the nutrient artery at the time of the accident. Dr. Leszynsky said, however, that he could find no mention in any work on anatomy of a nutrient artery to the parietal bone, although no doubt such an artery exists. The cavity may also have been due to a cyst, although there is no evidence of it. Dr. Leszynsky's diagnosis of the case was hysteria engrafted upon the results of injury to the brain.

Dr. JACOBY said he had seen Dr. Leszknsky's patient a number of times. He had, however, obtained an entirely different history from her, according to which she had been subject to convulsions before she fell out of the window. He supposed at that time it was a case of infantile convulsions, and that the other symptoms were due to hysteria. The cavity in the skull, he thought, was due to a cystic growth, which had produced a wasting of the upper part of the bone.

Dr. C. L. DANA said he had also seen the patient, but had never made a positive diagnosis, on account of the unreliability of the girl's early history. He thought Dr. Leszynsky deserved a good deal of credit for going into the case so thoroughly, and he considered his diagnosis, in which Dr. Jacoby also concurred, to be correct.

THE NERVOUS ORIGIN OF JAUNDICE.

Dr. A. D. ROCKWELL read a paper on this subject. He said it is a well-known fact that disturbance of the brain, both organic and functional, may very seriously interfere with the functional activity of distant organs. A cerebral disturbance may be the direct causative factor of very persistent derangements of the sexual apparatus; the bladder, intestines, stomach and heart may also be disordered by diseases of the central nervous system, as well as the kidney and the liver. So closely and so strangely are the vascular and the general nervous system related to each other, that their pathological conditions are often inseparably connected. The nervous system has an alliance so close with the functional activity of the secretory and excretory glands of the body, that emotional disturbances, according to their character, act as depressants or excitants of the functional life of these organs. Some of the more common of these effects are every day familiar facts, as when the flow of tears is excited through grief, or the secretion of saliva and gastric juice through the smell of food. In the same manner as the superficial glands are easily influenced, so in all probability are the blood-making or ductless glands regulated and controlled by the organic nervous system. Dr. Murchison, to whom the world is so much indebted for enlightenment on this subject, asserted that not only was the secrection of bile interfered with by prolonged mental anxiety, worry, and incessant mental exertion, but that the principles of sanguification and blood change, in which the liver takes part, were frequently deranged from these same causes. He states that acute atrophy, in which the secreting cells are rapidly disintegrated, and the functions of the organ arrested, appears in many instances to have a purely nervous origin; and very often the first symptoms of the disease have occurred immediately after a severe fright, or an outburst of passion in a person previously healthy. An impression made upon the brain appears to be reflected to the liver and deranges its nutrition. Even cancer of the liver appears sometimes to result from the functional derangement induced in the first instance by mental trouble.

Dr. Budd, another keen observer, wrote that mental anxiety or trouble seems to have great influence on the production of gall-stones, or at least of biliary gravel.

Dr. ROCKWELL said that he has had occasion to see and treat a considerable number of cases of jaundice dependent upon a great variety of causes, and he has been impressed with the frequent occurrence of cases due to deranged innervation interfering with the normal metamorphosis of the bile. According to his experience, there is little to differentiate in the diagnosis between jaundice, the result of purely nervous agencies, and where it results from the various other non-mechanical causes, unless it is the more sudden onset of the discoloration in the former class of cases. A thorough history of the case will, however, generally enable us to determine whether the exciting cause is of a nervous or a non-nervous character. Dr. Rockwell then gave the history of three interesting cases of jaundice of distinctly neurotic origin coming under his own observation. In conclusion, he referred to the striking similarity of symptoms of neurasthenia, with some of the manifestations of lithæmia, and mentioned the more prominent points of differentiation between those two conditions.

Dr. HERTER said he was much interested in Dr. Rockwell's paper. An explanation, he said, has occurred to him regarding the intimate relations between certain nervous conditions and disorders of the liver. In cases where jaundice follows a mental shock there may be a very general relaxation of the blood-vessels throughout the body, and especially in the liver. In hysterical and neurasthenic cases we can, by hypnotic suggestion, produce local conditions which depend upon a great dilatation of the vessels. If this does happen in the liver, it lowers the arterial tension in those vessels, and thus may permit the flow of bile into the smaller blood-vessels. Normally, the pressure is greater in the small blood-vessels than in the bile-ducts. When this order of things is reversed, however, the bile is taken up by the blood and jaundice will result.

Dr. WILLIAM D. GRANGER related a case in which jaundice was associated with decided mental disorder. The question at that time was whether the mental disturbance might not, in a measure, be due to the jaundice. The question was answered, however, by the patient's recovering from this attack and having a subsequent attack of mental trouble without any disorder of the liver.

Book Reviews.

TEXT-BOOK OF NERVOUS DISEASES, being a Compendium for the Use of Students and Practitioners of Medicine. By Chas. L. Dana, A.M., M.D. Wm. Wood & Co., New York.

At the present time when book-making has become more or less of a knack and not entirely dependent upon personal ability, it is refreshing to read and review a book that bears the stamp and worth of its author. The book before us may be said to do this admirably. To those already familiar with the writings and teachings of the author it will not be surprising that criticalness and thoroughness are prominent features of the work in question. A few words selected from the preface will show the position taken by the author in writing this volume: "Each subject has been taken, all the available facts regarding it ascertained, the writer's own facts collated, and with the data thus gathered the chapters have been written."

There are two entirely distinct ways of making technical or educational books. Each method has its virtues and its own field of usefulness. That is, in the first place, a man may, in the fullness of his knowledge which is the result of natural talent, great concentration and application, or remarkable acuity of observation, or all combined, sit down, and out of the depths of his wisdom, write a volume or a number of volumes that will not alone be entertaining and instructive, but worthy of the most careful study. It in all probability will not be a critical work, it will not be referred to for the solution of mooted points, nor will it be so useful to the beginner as to one who needs a little furbishing up on points that have escaped his observation, and who appreciates facts when they are presented in an interesting way. A type of such book-making we have in the periodical literature of Johnathan Hutchinson and Benjamin Ward Richardson. No one will gainsay the fact that the writings of these authors are of the highest order and an ornament to the literature of our profession.

In the second method an author may make his book on the lines laid down by Dr. Dana, as quoted above. A volume built on this plan, providing that it be conscientiously and experiencedly done, cannot fail to be of use.

The scope of the volume is included under five captions, viz.: Part I. General Description of the Nervous System, its Anatomy and Diseases. Part II. Anatomy and Diseases of the Cerebro-Spinal Nerves. Part III. Anatomy and Diseases of the Spinal Cord. Part IV. Anatomy and Diseases of Brain. Part V. Functional Nervous Diseases.

Realizing not alone the importance, but the absolute necessity of a knowledge of the anatomy of the nervous system to him who would acquire critical acquaintanceship with the diseases affecting this system, the author has paid special attention to this part of the work. It is a matter for congratulation to know that he has succeeded in giving a good general idea of the anatomy as held by the most advanced workers in this field to-day, and presented in such a concise form that it does not seem to burden the book and cause men who are not familiar with this part to be afraid to take hold of it. The author has been particularly fortunate in his choice of illustrations for this part of the work, and although the workmanship on the cuts is not always of the best, the illustrations form an important feature of the volume. Where other author's cuts have been made use of, credit is almost invariably given, and this is a plan that can not be too severely emulated. There is an impression abroad that an author may make use of a brother author's cuts if only a word of acknowledgement is given in the preface or in a footnote, and even this is dispensed with in many cases, as is illustrated by a recent treatise on surgery by an English author, who took wholesale, without the least suspicion of acknowledgement, something like a hundred cuts from Bryant's well-known Practice of Surgery, and then offered an extremely lame apology when called to account by Mr. Bryant.

Another important point to which we would call attention in the book is its classifications and sub-classifications. In a book where a science so extensive as the science of neurology must be presented in a small compass, the value of such classification in a logical sequence should not be overlooked. It makes a more lasting impression on a student and facilitates the rapidity with which the neurologist can get the gist of any subject which he may desire to look up.

The chapter on hygiene, prophylaxis and treatment shows that the author is not a skeptic nor a therapeutic nihilist, as many physicians who are concerned in the treatment of diseases, the larger proportion of which are admittedly uncurable, tend to be. The relief, the cure and the prevention of nervous disease is discussed critically and to the point. The pithiness and truth of some of his statements in this chapter we heartily commend to those who are wont to ride the "do" and "don't" hobby. For instance, "adults need to keep in mind but two words—moderation and exercise. With these they need not fear the use of alcohol, tobacco, tea, coffee or even occasional irregularities in sleeping and eating." The horipilation caused in the vegetarian, the total abstainer, and the tobacco crank, by such broad and unbigoted statements must be very amusing.

Epilepsy, hysteria, the spasmodic tics, paramyclonus, Thomsen's disease, paramytonia, and akinesia algera are discussed under the heading of the degenerative neurosis. Although there will be many who are not willing to concede all that the author states in summing up the pathology of the first one of these named, most neurologists who are abreast of the advanced pathology of to-day will agree with him, when he says: "The anatomical basis of idiopathic epilepsy consists in a nuclear degeneration and later a vacuolation of the cortical cells, beginning and most pronounced in the cells of the second layer. Also a proliferation and increase in the neuroglia tissue, this occurring most markedly in various islets or special areas of the cortex. The blood-vessels and connective tissue are involved only secondarily and later."

In regard to the surgical treatment for the relief of epilepsy the statements are very conservative. "Whenever epilepsy can be distinctly traced to a blow on the head the question of trephining should come up. If there is a history of fracture or present evidence of fracture, or even evidence of severe head injury, trephining is justifiable. On the whole, surgery can do little for acquired, and nothing for idiopathic-epilepsy." This statement can, we think, be taken as representing the most advanced opinion concerning operations in epilepsy.

Happily the author does not see fit to enter into any prolonged tirade against such measures for the relief of epilepsy as clitiridectomy, ovariotomy and other mutilations, and such fads as tenotomy of the ocular muscles, hypnotism, etc., but disposes of them in a few words relegating them to deserved inocuous desuetude.

The pathology of chorea as given here shows that the author has exercised rare discrimination in considering the various lesions which have been described as the cause of the choreic manifestations. He states, "the seat of the lesions of chorea is the gray matter of the cortex and its meninges, the pyramidal tract, lenticular nuclei, and the spinal cord. The lesions are, in acute cases, of the nature of intense hyperæmia, with dilatation of the vessels, small hemorrhages and spots of softening. There is infiltration of the perivascular spaces, with round cells, and swelling and proliferation of the intima of the small arteries. In chronic cases the evidence of vascular irritation is less, but there are perivascular dilatations and increase of connective tissue. The process suggests a low grade or an initial stage of inflammation. The cause of this is probably an infective micro-organism or a humoral irritation similar to that causing the rheumatic symptoms and the heart lesions." In this last sentence he would seemingly agree with a recent statement of Osler's, that however improbable the microbic origin of chorea may look at first sight, there is good reason for looking in this direction. Without stopping to discuss the various ideas of writers like Kirkes, Ehlischer, Jakowenko, Rosenthal, Money, and many others, the author gives in the above passage a good fair idea of the consensus of opinion of the men who have given their ideas as to the pathology and seat of this affection.

The pathology of the various affections discussed, though compressed into a very small space, is an important feature of the volume; and although the author is sufficiently conservative, it is easily seen that the line of thought that he would suggest is a progressive one; that is, he has apparently endeavored wherever necessary to harmonize our conception of the pathology of any disease with the progress that has been made in bacteriology.

Paralysis agitans is classified as a late degenerative neurosis and progressive facial hemiatrophy is placed under the heading of trophic and vaso-motor neuroses. In the latter, therefore, the author would discard the theory that the hemiatrophy was the result of a primary local wasting of the subcutaneous cellular tissue in consequence of which the elastic skin compresses the blood-vessels and so causes wasting in the bone on the one hand and an atrophy of the skin elements on the other. Astasia-abasia, notwithstanding the contributions that have been made to the literature, is still given the dignity of a symptom only. This opinion coincides with a recent utterance of Charcot.

The chapter on neurasthenia, as we should expect, is a masterly one. The student or physician who reads this chapter attentively will no longer have a vague idea of what is meant by neurasthenia, and he will find many valuable suggestions regarding the treatment of this bugbear.

It is impossible in the review of a book, within a reasonable space, to indulge frequently in quotations or to go into the various subjects in detail, but there are two or three points which are markedly impressed on the mind of the reader of this book. They are the remarkable and constant accuracy with which recent knowledge concerning pathology, etiology and treatment, is incorporated in the discussion of the various articles; such, for instance, as in Reynaud's disease, trigeminal neuralgias, angeio-neurotic œdema, syringo-myelia, Basedow's diseaae, cortical localization, and many others. This shows that the author's reading has been a wide, a critical and a comprehensive one.

Secondly, the conciseness with which the ideas are put forth, not at expense of clearness, but tersely and to the point. Repetition, so difficult to avoid in a text-book, is not particularly noticeable. It is not attributing fault to the book to say that it is too scientific. It is a book that will commend itself to the industrious, intelligent student who would know something of the subject of which it treats. To the laggard or to the indolent it will not appeal, it is too suggestive and apt to awaken thought and deliberation.

In a book wherein there is so much that is commendable it is unfortunate that the publishers have not seen fit to do their part and make it a specimen of the typographical art. If they would exercise a little discrimination and give us inferior books clothed in inferior binding and type, we would be greatly obliged. In the volume in question, however, the only thing for which we have to thank the publishers is for placing a dozen blank pages at the end of the book. The student and general practitioner will find these of great advantage for the making and preserving of important notes and data.

The author is entirely too modest in saying that he does not present the book with the idea of comparing or competing with the large treatises already in the field. It can be said, and with truth, that it would be difficult to recommend a more suitable volume, to one who is desirous of getting a sound comprehensive knowledge of neurology, and that fully abreast with the times. The book is a credit not alone to the author, but to American neurologists. JOSEPH COLLINS.

A TREATISE ON NERVOUS AND MENTAL DISEASES, FOR STUDENTS AND PRACTITIONERS IN MEDICINE. By Landon Carter Gray, M.D. Pp. 687; including a glossary and index and 168 illustrations. Lea Brothers & Co. Philadelphia, 1893.

The work under consideration is by no means a hasty compilation of facts and theories, but is the practical result of seven years' careful labor by an author who is particularly fitted by experience and capability for the successful accomplishment of his task. It is a difficult matter to embrace in one volume, without making it too cumbersome, a treatise on insanity, together with a treatise on nervous diseases, without one or both of the subjects suffering from a deficiency of elaboration and lack of finish. It is a unique experiment, and one which has not been previously attempted and can only be accomplished by the omission of all matter which is not absolutely essential. In this instance the attempt to avoid all superfluity of language is apparent, but not unpleasantly so. The various subjects are shorn, perhaps too closely, of rhetorical ornamentation to be entertaining, but this, of course, does not in the least detract from the scientific value of the work.

The opening chapter on the anatomy of the brain and the localization of the various cortical centres and the anatomy of the cord are carefully written and scientifically accurate. The minute anatomy, especially that relating to the nuclei of the cranial nerves and their fibre and the fibre systems of the cord, is not elucidated sufficiently to satisfy the minds of most readers. Illustrations accompanying the text on these subjects are of paramount importance, as they furnish the best means of impressing on the mind the topographical relations of the various cell and fibre systems. The illustrations of the pons and medulla, from an artistic standpoint, are eminently satisfactory, but from an educational point of view they are somewhat disappointing. The nuclei and fibres of the last six of the cranial nerves are not depicted at all in transverse section, and the text gives decidedly meager and insufficient information about them. The gross anatomy and topography of the brain and cerebellum and the cortical localization of special centres are very satisfactory. Excellent illustrations elucidate the important features of these subjects, and the descriptive text is concise, accurate, and sufficiently exhaustive.

The same criticism which has just been applied to the medulla can be applied equally well to the spinal cord. The anatomy of the cord is well set forth as far as it goes, but it does not go far enough. The ascending and descending nerve tracts in the white matter are aptly described and their topography clearly indicated in the accompanying illustrations. The change in the contour of the gray matter at different levels and the arrangement of the groups of cells in the anterior horns are satisfactorily shown. Clark's columns are, however, only referred to as being the recipients of a set of fibres entering the posterior horns. No information is advanced concerning the situation of the cells, or of the points of origin and termination of the column, and the probable function of the cells is not referred to. The nerve fibres entering and leaving the cord are all described in the text except those concerned in the transmission of the reflexes, but none of them are shown in illustration.

The chapter on electricity is certainly very complete. The different forms of batteries which can be used for medical purposes; the various instruments which are essential in electro-diagnosis and electro-therapeutics; the method of applying the currents, and the diagnostic uses of the currents, are explained thoroughly, and will be found profitable reading for the student and practitioner.

The chapter on tests of motor and sensory symptoms is especially to be recommended. In it the reader is instructed in the various methods of examining for abnormalities of the special senses, the reflexes and the muscular system, points which are usually essential in diagnosis and which are not often thoroughly understood. The rest of the treatise on nervous diseases includes diseases of the peripheral nerves, of the spinal cord and of the brain; cerebro-spinal diseases; neuroses, under which heading are included such affections as epilepsy, neurasthenia, hysteria, hypochondria and migraine; diseases of microbic origin, such as tetanus and hydrophobia; and the various other affections without which a treatise of nervous diseases would be incomplete.

The subjects are well arranged. The symptomatology and etiology are very thorough and complete without being in the least verbose. The pathology is, in the main, precise and correct. In a very few instances, however, the advances of the past year or two have been overlooked. This slight defect is more than counterbalanced by the attention which the author gives to therapeutics, a subject which is generally more or less neglected by modern writers. The treatment of each disease is considered in all its details, and the usefulness of the most recent remedies demonstrated.

The treatise on Mental Diseases is by no means the least important feature of the work. Dr. Gray is well qualified by years of personal experience to write comprehensively on this subject. The student is not confused by a bewildering and interminable classification; on the contrary, Dr. Gray has attempted to simplify this subject, with a success which, it is hoped, other authors will not be slow to recognize and imitate. This is especially evident in the chapter on Paranoia, under which heading the author, whether properly so or not, includes several forms of insanity, such as the puerperal condition, insanity from certain febrile diseases, epilepsy and toxæmia from alcohol, morphia and cocaine, varieties which, by other authors, are usually considered under very different headings.

The perusal of this part of the work is calculated to give the reader an excellent insight into the nature of and difference between the various forms of mental disease. If it is less complete and less scientific than some other works on insanity it is at the same time less complicated and more comprehensible. It was not written for alienists who may regard it purely from the standpoint of the alienist, but by other medical readers it will be highly appreciated and often consulted where an ultra-scientific treatise would be rejected.

The glossary at the end of the volume will materially assist those who are not conversant with neurological terms to a thorough comprehension of the text.

The index is not by any means complete. It is an important feature in a work of this kind and greatly enhances its usefulness. Many references are entirely omitted.

Dr. Gray is to be congratulated on his choice of a publisher. The book is well printed on excellent paper, and the illustrations, taking them all together, are far superior to those contained in other works upon the same subject. G. M. H.

INTERNATIONAL CLINICS. A quarterly of Clinical Lectures on Medicine, Surgery, Gynæcology, Pediatrics, Neurology, Dermatology, Laryngology, Opthalmology and Otology, by professors and lecturers in the leading medical colleges of the United States, Great Britain and Canada. Edited by John M. Keating, M.D.; J. P. Crozu Griffith, M.D.; J. Mitchel Bruce, M.D., F.R.C.P.; David W. Finlay, M.D., F.R.C.P., April, 1891. J. B. Lippincott Co., Philadelphia, publishers.

This first volume of these quarterlies is undoubtedly of value to all who desire to inform themselves through modern thought on the topics of which it treats. It is evidently the desire of the publishers to give the general practitioner a sort of post-graduate instruction at home. The effort, as far as one can judge from this first volume, is all that its publishers could do in this direction, and they evidently have not spared money or zeal in the task. The work is well put together—paper, typography, and illustrations—all of the best.

The following are some of the subjects treated of in the field of neurology and medicine:

Acromegaly, by James Ross. Different Types of Paralysis in Young Children, by Landon Carter Gray. Chorea, by Sir Dyce Duckworth. The Remote Effects of Traumatisms as Seen by the Neurologist, by H. C. Wood. Functional Nervous Troubles, Neurasthenia, Its Occurrence in Young and Old; Symptomatology and Treatment, by B. Sachs. Myotonia and Athetoid Spasm, by Chas. K. Mills. Alcoholic Paralysis, by David Ferrier. Treatment of Obstinate Sciatic Pain by Splint Rest and Cold. by S. Weir Mitchell. Etc., etc. In all thirty-seven subjects are treated of in the various departments of the medical art.

The utility of the plan laid out can only be judged by time. If the succeeding books are in keeping with the standard of the first volume it will prove of great use to the desiring, self-informing worker in his endeavor to keep abreast with the advances of theory and practice. The topics in the field of neurology are all carefully finished lectures and by representative men in their specialty. Space does not permit us to discuss them in detail.

THE STRUCTURE AND FUNCTIONS OF THE BRAIN AND SPINAL CORD. Victor Horsley, London. Charles Griffen & Co., 1892; pp. 223.

The book is a series of nine lectures given as the Fullerian lectures at the Royal Institution in 1891. Another series was given in 1892, and will, presumably, be published soon, while still a third is in prospect. This last series will deal with some results of research in physiological psychology. The second dealt with the more complicated portions of the central nervous system, as shown in the encephalon, while the lectures before us have to do with the spinal cord and ganglia alone. The initial lecture is historical and gives interesting extracts from Willis and some of his contemporaries, as well as a sketch of neurology from the earliest times. With the second chapter our author opens the discussion of the comparative anatomy and physiology of nervous structures by describing the reactions of protoplasm, the unicellular animals, coelenterata, echinodermata, crustacea, amphibia, etc.

We start with susceptibility to stimuli and more or less definite reactions. As we ascend the series the nervous system becomes more differentiated. Through the special sense organs the organism becomes more susceptible, through segregation of the tissues there comes subdivision in the reactions, or a form of localization. Through union of the central masses arises the possibility of that coördination of movements on which all refinement and effectiveness of motion depends. The reactions take the form of simple reflex, rhythmical and automatic responses. As low in the series as the medusa we are able to discover all the elements of the reflex, are as found in the higher forms. Each of these elements has then to be studied in detail, for they are capable, even in this simple condition, of suggesting all the fundamental problems involved. In describing the nerve fibres in chapter four, Gaskell's conclusions concerning the non-medullated fibres are introduced, and the results of his work are here and elsewhere brought out. Here, too, the bilateral representation of function is touched upon. The nerve cells of the spinal and sympathetic ganglia are next described, and the value of the nerve impulse as a reaction by which to investigate the more complicated structures is indicated. The next chapter deals with the physiology of the nerve fibre, including some statement of the experiments made to determine the changes in the nerve elements as the result of excitation. Here the conduction of the nerve fibre in either direction and the possibility of several impulses passing simultaneously in the same fibre are noted. The galvomometer shows that the nerve when excited directly produces a much stronger current than when excited through the medium of a nerve centre. By the method of recording the passage of the nerve impulse, the author in conjunction with Prof. Gotch has found that the excitation of the spinal nerve centres by way of the dorsal nerve-roots was conveyed up the cord in the dorsal half of that organ and not in the ventral. It also passed down the dorsal roots, as well as down and out by the ventral roots, the traditional and accepted pathway. When the ventral roots were directly excited, the impulse was not detected at higher levels of the cord, showing that there was a block in that direction. From these and other facts the author concludes that the source of nerve energy is on the *afferent* side of the nerve centre—a conclusion which does not appear to us justified in view of the recent finer anatomy of the cord.

He considers next the manner in which the nerve centres are aggregated in the cord and medulla. Taking the divisions of a limb from above downward, we find the proximal parts of the limb represented at the higher levels in the cord and the distal at lower levels—this so far as the motor centres are concerned. For sensation, however, no such nice localization can be made.

The last chapter deals with this arrangement of the cranial nerve in the medulla, and emphasizes the collocation there of the centres concerned in similar or associated functions. Finally, in examining the distribution of the impulses which ascend the cord—in the cat when a stimulus is applied at the caudal end—it was found that 80 per cent. of the impulses, as measured by the galvomometer, pass up the same side as that to which the stimulus is applied and the remaining 20 per cent. up the opposite side. Of those on the same side, 60 per cent. of the total pass by way of the dorsal and 20 per cent. by way of the lateral columns. Of those on the opposite side more than 15 per cent. pass by the dorsal, and a trace by the the lateral columns.

The book is valuable as a clear exposition of fundamental principles in neurology, and it is to be hoped that the companion volumes will soon be available.

H. H. DONALDSON.

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